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Official Journal of the

INTERSTATE POSTGRADUATE MEDICAL ASSOCIATION

VOLUME 2, Number 2 AUGUST 1947

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Recent Advances in the Control of Rheumatic Fever

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NEITHER rheumatic fever nor rheumatic heart disease have been reportable diseases in civil life; hence their actual incidence can only be surmised. However, Swift estimates that there are probably between 30,000 and 60,000 deaths from rheumatic heart disease in the United States a year and between 200,000 and 260,000 new cases of rheumatic fever a year. In the military services acute rheumatic fever presented one of the great problems of nontraumatic military medicine. Its incidence in World War II markedly exceeded that observed in similar age groups in civil life, although the disease was of a milder nature. During the months of April and May 1944, which represented the period of highest incidence, an average of 100 new cases were reported weekly from Army Air Force military posts alone and about 8 per cent of these developed evidence of cardiac damage.

In view of these circumstances the Army Air Forces established a rheumatic fever control program and much of the data presented here were gathered under its auspices. The program allowed a concerted opportunity to study and treat this disease on a large scale.

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NOTE—Read before the meeting of the Interstate Postgraduate Medical Association of North America, Cleveland, Ohio, October 15 to 18, 1946.

ETIOLOGY

A very high incidence of our cases of rheumatic fever could be shown to have their attack preceded by Group A beta-hemolytic streptococcal infection of the upper respiratory tract. Although this relationship has been recognized for a number of years, the war gave the opportunity to prove it on a large scale.

The present-day classification of streptococci dates back to Brown's work in 1919 in which he defined three varieties from their characteristics on blood agar—alpha, beta, and gamma. Alpha is commonly called *Streptococcus viridans* and is most commonly known as the cause of subacute bacterial endocarditis. Gamma is probably not of pathogenic significance, but beta or hemolytic streptococci are common pathogens for man. Beta-hemolytic streptococci may be further subdivided by precipitin tests into groups, of which Group A is the most common pathogen. The Group A streptococcus may be further subdivided into forty-seven types by a precipitation reaction. Identification of these types was first reported by Griffiths in England in 1926 and during the last few years

has been completed by Drs. Lancefield and Swift at the Rockefeller Institute. Epidemics of Group A beta-hemolytic streptococci usually show a predominance of one type. Types 17 and 19 were the commonest found in this country during the war.

The usual course of events in rheumatic fever is as follows: first, an upper respiratory Group A hemolytic streptococcal infection, designated by some as Phase I; second, a quiescent stage, designated as Phase II, which may be considered as an incubation period and the stage of rheumatic activity; then Phase III, which takes numerous forms and varies in duration from a few weeks to several years.

The original upper respiratory infection may be so mild as to escape detection unless careful cultures are made from both the throat and nasopharynx, or so severe that abscesses form in the peritonsillar tissues. The distinguishing characteristic of a respiratory infection, so far as inducing rheumatic fever is concerned, is that it is induced or accompanied by Group A hemolytic streptococci. Because such respiratory infections as colds, influenza, catarrhal fever and comparable diseases are not precursors of rheumatic fever unless complicated by Group A hemolytic streptococcal infections, statistical studies of the relationship between respiratory infections in general and the onset of rheumatic fever in particular have little significance unless qualified by careful modern bacteriologic data.

It is now fairly definitely established that infections of human beings with streptococci belonging to groups other than Group A do not set off attacks of rheumatic fever. It is true that a rise in streptococcal respiratory infections is usually accompanied by an increase in the incidence of colds, but the converse does not always hold. The autumnal epidemics of colds are usually devoid of streptococcal complications, whereas such complications were found to be relatively much more common in late winter and early spring—the season of the highest incidence of rheumatic fever. We found that the clinical diseases that most commonly induce rheumatic fever are streptococcal nasopharyngitis, follicular tonsillitis, and scarlet fever.

CHARLES S. HIGLEY

CONTROL MEASURES

With this background of knowledge, it is obvious that control of streptococcal disease offers hope of being a major factor in the prevention of rheumatic fever. The use of sulfadiazine in large-scale prophylaxis was first used in 1943 as a means of control of meningococcus meningitis. The following year it was used at a number of installations showing high respiratory rates, with rather striking results. The experience of Warren at Truax Field is probably typical of the experience at other fields. He administered 1 gm. of sulfadiazine daily to a group of 6,000 men for twenty-one days. Ten days after the first group was started, a control group of 3,000 men was started on the same dose. All hospital and sick call admissions for acute infectious diseases in both groups were charted.

Results showed a marked reduction in nasopharyngitis due to beta-hemolytic strep and in scarlet fever. As could be expected, no effect was noted on primary atypical pneumonia, mumps, or measles. The rheumatic fever rate showed no change until about twenty days after therapy was started. This delayed effect fits in with our present conception of the etiology of rheumatic fever. The incidence of drug reaction among these 9,000 men was only .37 per cent. This agrees with the figures published by Holbrook on the experience of the A.A.F. on 40,000 troops given prophylaxis. He stated that .12 per cent had some type of reaction but that only .03 per cent had a reaction severe enough to lose time from duty.

This method then has value in its place, when disease rates in groups such as schools or institutions reach epidemic levels and especially if the disease is streptococcal in nature. It is only of value in groups and should not be interpreted as applicable to individuals in private practice, for instance. Other means of control of airborne streptococci tried in the A.A.F. program were the laying of dust by oiling blankets and floors and air sterilization by means of vaporizing sodium hypochlorite or propylene glycol. None of these measures gave as encouraging results as was hoped for and their use was not continued on a large scale.

DIAGNOSIS

Although the diagnosis of acute rheumatic fever may be relatively simple, in many cases it is quite difficult. The necessity of accurate diagnosis is obvious, for a false positive diagnosis may unnecessarily subject a patient to prolonged hospitalization with a possible development of a neurosis involving the heart or musculoskeletal system. On the other hand, to overlook a positive diagnosis of rheumatic fever may result in improper treatment and the development of rheumatic heart disease.

Dr. T. Duckett Jones has presented his criteria for diagnosis in a concise form which establishes the best standard for today. He presents five major manifestations for diagnosis: (1) carditis, (2) arthralgia, (3) chorea, (4) subcutaneous nodules, and (5) history of recurrent attacks. Of these major manifestations at least one should be present. Minor, or less specific, manifestations are fever, abdominal pain, precordial pain, rash, epistaxis, pulmonary changes, and laboratory findings including chiefly electrocardiographic changes and an elevated sedimentation rate. The latter is probably the most important. Jones believes that it is necessary to have, in addition to one major manifestation, at least two minor manifestations to make the diagnosis certain.

Two special laboratory tests are of value in determining whether a patient has recently sustained a Group A streptococcal infection. These may be of value in helping to establish a diagnosis of rheumatic fever in patients with only minimal clinical signs. The antifibrinolysin blood level determination is a relatively simple procedure and can be performed in the average hospital laboratory. It is reasonable to conclude that this test is positive in 85 per cent of Group A infections in five to seven days after onset. The antistreptolysin blood serum titer determination is a complex procedure requiring special apparatus and specially trained technicians. One hundred units or more is looked on as positive. In acute rheumatic fever this test is almost always positive.

EXPERIENCE IN THE A.A.F.

In analyzing cases diagnosed as having rheumatic fever in the A.A.F., Connors followed 1,072 cases of rheumatic fever in white enlisted men from all sections of this country. The following are a few highlights in his survey: (1) The familial incidence of rheumatic fever and heart disease was not high. (2) In the personal history of the individuals 60 per cent had their initial attack of rheumatic fever in the Army. Approximately one-half had had their tonsils removed prior to their attack in the Army. Almost 23 per cent had had scarlet fever in the past. (3) Cases occurred in individuals from every part of this country and the incidence was largely in accord with

state populations. (4) The average case began in March in a soldier nineteen years of age, in the service six to twelve months. He had been at a northern post one to three months before acquiring his inducing infection. Rheumatic fever began within twenty days of this infection. (5) The vast majority had joint involvement in a lower extremity, with more than one joint involved. The next most common involvement, excluding the heart, was the skin, especially erythema marginatum. (6) There was transient evidence of cardiac involvement as indicated by the development of a murmur in about two-thirds of the cases. Very few showed any change in cardiac rhythm. About one-half had transient EKG changes. (7) In a smaller group observed throughout a convalescent period of six months cardiac abnormalities disappeared in all but 8 per cent, emphasizing that permanent cardiac sequelae are not common. (8) Three cases died. Slightly more than 16 per cent were given a medical discharge. Sixty per cent were returned to duty and the others were still convalescing in rheumatic fever convalescent centers. Thus it can be seen that we were dealing with a relatively mild form of rheumatic fever in the Army.

TREATMENT OF ACUTE ATTACK

Between November 1942 and August 1945, my associates and I treated 186 well-authenticated cases of acute rheumatic fever at the A.A.F. Regional Hospital, Madison, Wisconsin, and this afforded the opportunity to use various forms of treatment and draw some conclusions as to their relative effectiveness.

It is well to stress the difficulty of accurately evaluating therapeutic measures in this disease. The major value of any therapeutic measure in rheumatic fever is the prevention of cardiac damage. Because it may take several years for clinical evidence of damage to become evident, a close follow-up of cases should be conducted for several years to throw light on this question. This, of course, we were unable to accomplish. Furthermore, the accuracy of a comparison of other features such as the effect on sedimentation rates and duration of fever depends on the similarity of cases being observed. We know rheumatic fever cases vary greatly in their individual severity as well as in yearly and seasonal variations. Also, some cases run a monocyclic and some a polycyclic course. In spite of these difficulties, it is believed that we are in a position to make some generalizations, on the basis of our experience, owing to the large number of cases observed.

GENERAL TREATMENT

Little need be said here about the well-established methods of general treatment, such as an adequate nutritious diet with ample vitamins and protein, protection from exposure to streptococcus infections, and rest until clinical and laboratory evidence of rheumatic activity is gone. These measures are well proved and were utilized in our entire series.

Sulfonamides have been ruled out as of value in the treatment of the acute attack by the work of Swift and Jones, who demonstrated that sulfonamides in the acute stage of the disease have no beneficial effect and in fact may increase the severity of the disease. However, the prophylactic use of sulfonamides, during remissions to protect against streptococcal reinfections is thought to be of value. Thomas has recommended the use of a half gram of sulfadiazine twice daily, year round for five years following the first attack.

Penicillin was used in a cooperative study at Buckley Field, Kearns Army Air Base, and Truax Field Regional hospitals. Thirty-eight cases were treated in doses of 25,000 units at three-hour intervals for a total of 1,000,000 units. No benefit could be demonstrated in any case, and definite aggravation of the course of the disease was evident in several cases.

X-ray has been used therapeutically in the treatment of carditis by Levy and Golden, but no great enthusiasm has been shown by others who have used it. Streptococcus vaccines have been used by Swift who reported unsuccessful results. Antistreptococcus serum also has been tried and again the results were not beneficial.

SALICYLATE THERAPY

For more than half a century it has been recognized that salicylates are the most useful drugs in the treatment of rheumatic fever and their action seems to be specific in the alleviation of symptoms. In 1933 Findlay made the claim that salicylates also had a protective action against carditis in rheumatic fever. Coburn published an article in December 1943 in which he also claimed a specific action by salicylates in the prevention of carditis and gave his hypothesis as to the nature of this action. In a series of 38 cases treated by doses of 10 to 20 gm. intravenously, he reported that no cases had developed heart disease in one year, whereas in 63 cases treated with smaller oral doses, 21 had developed evidence of heart disease in a year.

He reported that patients with plasma salicylate levels of 35.9 to 40.0 mg. per cent showed a prompt and progressive subsidence of rheumatic inflammation, whereas cases with plasma levels below 25 mg. per cent continued to manifest an active inflammatory process. He stated that the intravenous administration of sodium salicylate is required to maintain a rapid rise in plasma concentration of 40 mg. per cent or higher. He then concluded that a plasma salicylate level of at least 35 mg. per cent may be required to suppress rheumatic activity and that plasma levels below 20 mg. per cent may relieve symptoms although masking a progressive inflammatory process.

Methods—We have used salicylates in three different methods in an effort to compare the effectiveness of each method and in an attempt to repeat Coburn's successful results. Minimal oral salicylate dosage was used in 88 cases. In this method 2 to 7 gm. of sodium salicylate with equal doses of sodium bicarbonate were given every day until symptoms were relieved and then a small maintenance dose was given. The total weekly dose remained under 60 gm.

Maximal oral salicylate dosage was used in 50 cases. Ten or more grams of sodium salicylate were given every twenty-four hours until the sedimentation rate was normal for two weeks. Sodium bicarbonate in doses of 0.6 gm. was given with the salicylate doses.

Intravenous salicylate dosage as specified by Coburn was used in 48 cases. Ten to 14 gm. of sodium salicylate were given daily in 1 liter of normal saline for seven days and then the patient was given the maximal oral treatment. The solution was prepared at the hospital by dissolving 10 gm. of chemically pure sodium salicylate in 20 cc. of distilled water, bottling in rubber-stopped vials, and autoclaving. This solution was then added to 1 liter of saline at time of use. Sodium bicarbonate was not given routinely with this method.

Salicylate levels—Plasma salicylate levels were determined at frequent intervals by the method of Coburn and his associates. It was found that with the minimal method, levels reached 16 to 30 mg. per cent. The maximal oral method gave levels of 20 to 60 mg. per cent and the intravenous method gave levels of 22 to 60 mg. per cent. Levels of 30 mg. per cent or above were found usually in the second day of therapy by the maximal oral method, the third day by the intravenous method, and were seldom reached in the minimal oral method. High levels were more readily maintained by oral dosage than by intravenous in the usual case.

It has been shown by Smull and her associates and by Major P. K. Smith that with the simultaneous administration of equal amounts of sodium bicarbonate and oral salicylates the resulting level was lower than without bicarbonate. This has been true in our experience, and the mechanism is probably due to increased excretion of salicylate in the urine. Although sodium bicarbonate does aid in minimizing nausea with oral dosage, the disadvantage of lowering of salicylate levels makes it wise to give only minimal doses.

Results—Although it is recognized that evaluation of symptomatic relief afforded by a medication is difficult, we believe that we observed some advantage in intravenous salicylate in this respect. In many cases relief for painful

joints came in a few hours after the start of the intravenous solution, while the oral methods usually took two to three days. Nausea was more common with intravenous administration than oral.

Statistically, the sedimentation rate returned to normal in about the same time with each of the three methods. Comparison of average days of elevation shows 49.8 days for maximal oral, 45 days with minimal oral, and 58.6 days with the intravenous method.

Temperature elevation returned to normal quickest with the maximimal oral method. Averaging the large number of cases followed shows only 3.77 days of fever for maximal oral, 4.57 days for intravenous, and 11.6 days for minimal oral methods.

There was no statistical difference in the prevention of cardiac damage, for 7 cases receiving intravenous and maximal oral salicylates and 7 cases receiving minimal salicylate therapy developed significant cardiac murmurs not present on admission or showed progression in pre-existing heart disease. Death due to acute carditis occurred in only one case in the entire series and this was in the minimal group.

Salicylate toxicity—Emphasis on the possible toxic effects of salicylate therapy has come with the introduction of large doses with accompanying high serum salicylate values. Toxic reactions of varying degree occurred in 0.7 per cent of our minimal oral cases, 2.2 per cent of the maximal oral, and 10.5 per cent of the intravenous cases. We have found that with levels of 20 to 30 mg. per cent, tinnitus, coloring of vision, nausea, and vomiting may occur. These are not considered serious and disappear with reduction of dosage. With levels above 30 mg. per cent, as may be obtained by the intravenous and maximal oral doses, hyperventilation, acute maniacal delirium, and pustular acne may develop as signs of toxicity. Coombs has demonstrated the physiological mechanism accompanying this reaction. Stimulation of the respiratory center occurs, with hyperventilation usually characterized by a normal rate but increased depth. This brings on a respiratory alkalosis, resulting in low serum CO_2, reduction of renal function with water retention, retention of chlorides, numbness and tingling of extremities, and tetany with carpopedal spasm.

In our experience this toxic effect, while severe, clears up without serious sequelae on cessation of the drug and the administration of 1 to 2 liters of normal saline intravenously. If severe, the administration of .6 gm. of sodium bicarbonate every four hours in addition to the stopping of the drug and the administration of saline, is indicated.

Effect on prothrombin time—The reports of Link as to the prolongation of prothrombin time by salicylates has led to much discussion of the clinical application of this fact. While we have noted some prolongation of the prothrombin time (Quick method) with high serum salicylate levels, no clinical evidence of untoward results due to this have been noted in our entire series. It is believed that this point has been overemphasized and is of little clinical significance. If hemorrhagic phenomena develop, they can be controlled by the administration of synthetic vitamin K.

CONCLUSIONS

1. In the great percentage of cases of rheumatic fever, a preceding Group A hemolytic streptococcal infection can be traced, demonstrating an important etiological relationship.

2. Control of rheumatic fever rests on control of Group A hemolytic streptococcal disease and proper treatment of the acute phase of rheumatic fever. The use of doses of 1 gm. of sulfadiazine daily will markedly reduce Group A infections in groups.

3. In our experience the best method of treatment of acute rheumatic fever appears to be the use of large doses of salicylates by mouth.

REFERENCES

1. Warren, H. A.: Sulfadiazine prophylaxis of acute infectious diseases. J. Indiana M. A., 37:447-51, 1944.
2. Warren, H. A., Higley, C. S., and Coombs, F. S.: The effect of salicylates on acute rheumatic fever. Am. Heart J. 32:311-26, 1946.
3. Coombs, F. S., Warren, H. A., and Higley, C. S.: Toxicity of salicylates. J. Lab. & Clin. Med. 30:378-79, 1945.

The Use and Abuse of Forceps

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THE introduction of the forceps in obstetric practice by the Chamberlen family in the last part of the sixteenth century was truly a revolutionary event. Up to that time, there was no known instrumental method for the delivery of a living child, although instruments of destruction and manual operative methods, chiefly version and extraction, had been in use for centuries.

As the use of the forceps became better understood and the instrument was improved, it proved a veritable boon to obstetric practice. Especially did it largely abolish one of the most distressing complications of labor, namely, vesicovaginal fistula, the result of prolonged pressure of the fetal head against the bladder. Although such fistulas are still all too common, today they usually are the result of either gynecologic surgery or radium burns and rarely is one encountered as the result of birth trauma. As is the case with many other advances in medical practice, the widespread use of the obstetric forceps has led to certain abuses that should not be ignored.

In any discussion of the use of forceps one of the points that should be stressed most is the need for a thorough understanding of the conditions that must be fulfilled before the operation can be given serious consideration. First and foremost, the cervix must be fully dilated. The forceps was never intended to be used as a cervical dilator and when so used can only result in disaster to both mother and child. Obviously, the membranes must be ruptured. There must be no marked disproportion between the maternal pelvis and the fetal head. Again, the obstetric forceps was never intended as an instrument of compression, and, when it is so used, severe intracranial damage all too frequently results.

With one exception, the child must present by the head and an accurate knowledge of the position of the head is vitally necessary. In general, the shape of the instrument is such that it can only be applied with safety to the sides of the head, regardless of its position in relation to the pelvis.

One can certainly take no credit to himself when he delivers a baby with forceps marks over the frontal and occipital regions or even with a black eye. Application of the forceps elsewhere than to the sides of the head all too often results in tentorial tears with accompanying intracranial hemorrhage, occasionally with compression fracture of the skull, and usually

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with severe laceration of the maternal soft parts. The one exception to this last-named requirement is the application of forceps to the after-coming head in breech presentation. While the majority of breech deliveries can be completed safely by the Mauriceau maneuver or one of its modifications, most authorities now agree that if any serious difficulty is encountered in the delivery of the head, it is wise to assist the delivery by the application of forceps.

The last requirement for the use of forceps is that the head must be well engaged in the pelvis. It is axiomatic that the higher the head is arrested in the pelvis, the more difficult and dangerous the operation becomes. The reason for this is two-fold: the higher the head, the more difficult it is to apply the forceps with accuracy; and, secondly, the greater the distance that the head must be delivered by traction, the greater the likelihood of severe trauma to both fetus and mother. Fortunately, the high forceps operation has been relegated to the obstetric ash-heap. As a rule, when the head becomes arrested above the level of the ischial spines it means that some complication, such as a contracted pelvis, a head that is too large to pass with safety through the pelvis, or malposition of the head, has been overlooked and should have been corrected long before the second stage is reached. In those rare obstetric accidents such as prolapse of the cord with the head high, delivery can usually be terminated more safely by version and extraction than by forceps.

It is the usual custom to list many of the indications for the use of forceps under two general headings, fetal and maternal. As a matter of fact, one category may suffice. To paraphrase De Lee, we do forceps operations because a normal birth cannot occur quickly enough to insure safety to either child or mother or both. Undoubtedly, if given sufficient time, the majority of such babies would be born spontaneously but with unwarranted hazards to one or both patients.

The fetal indication of paramount importance is so-called fetal asphyxia—in most instances more correctly termed fetal anoxia. This may be produced by prolonged pressure of the head on the pelvic floor, by interference with the circulation through the cord thereby preventing adequate oxygenation of the fetal blood in the placenta, and, most often, by the excessive use of analgesic and anesthetic drugs in labor. Recent work by Lund in our own department has convinced us that the most reliable criterion of fetal embarrassment in labor is the fetal heart. Lund showed that the so-called rapid fetal heart rate rarely occurs and, when it does, is of little significance. However, when the rate falls to one hundred or less between contractions, it usually means that the fetus is suffering from oxygen want. Harris and Waters showed that in such cases the administration of pure oxygen to the mother between uterine contractions will restore the fetal heart to its normal rate unless compression of the cord is present. This procedure, which is quite simple and which can be carried out with a minimum of apparatus, in our hands has proven most valuable. It has permitted us to carry many patients to spontaneous completion of delivery—patients who, without this aid, would probably have needed forceps delivery.

THE maternal indications for the use of forceps again may be included under the time factor; namely, that delivery cannot be completed quickly enough to prevent unwarranted stress and strain to the mother. As will be discussed later a strict interpretation of this statement can, without doubt, lead to serious abuse of the obstetric forceps. However, there are many instances such as prolonged arrest of the head in the second stage, when the mother as well as the child may be subjected to very real danger through permitting labor to continue. In addition, certain conditions are encountered such as myocardial damage, severe diabetes, a uterus weakened by a previous cesarean section scar, and the like, where it is often advisable to terminate labor by forceps as soon as the head reaches the pelvic floor.

So-called maternal exhaustion as an indica-

tion for forceps has practically disappeared in modern obstetrics. A clear understanding of the necessity for adequate fluid and food intake and periods of rest in prolonged labor has made the parturient patient with clinical manifestations of exhaustion a rarity.

In any discussion of the use of forceps, considerable space is usually devoted to the presentation of the advantages of certain types of the instrument and the disadvantage of others. I am in complete accord with De Lee when he stated that it is the man behind the forceps rather than the instrument that counts. The number of different types available, each with its own advocates, is so great as to approach utter confusion. My own opinion is that one should learn the advantages and limitations of one or, at most, two types of forceps, instead of attempting to become proficient in the use of many. If one accepts this view, then the instrument must be one of the several varieties that either provides axis traction or else has shanks sufficiently long to permit of simulated axis traction manually. Within these limitations, the selection of the instrument can safely be left to the practitioner's personal preference. A number of forceps have been devised for the special purpose of rotation of the posteriorly arrested occiput. Some of these possess real merit. However, it is well to remember that, when it becomes necessary to rotate occiput posteriors, the overwhelming majority of them can be rotated manually with much less trauma to both mother and child.

An adequate discussion of the abuses of the obstetric forceps would exceed the limitations of this presentation. Certainly two of the most disastrous sequelae of forceps delivery are the result of the application of the forceps through a partly dilated cervix and incorrect application in relation to the position of the fetal head. These have been discussed previously and are repeated here for emphasis. One can be certain in stating that more actual damage is done to both mother and child through these two errors than all others.

Other abuses chiefly depend on one's obstetric philosophy. Certain authorities have made the claim that delivery can be accomplished with less trauma to both mother and child by so-called "simple" outlet forceps than by spontaneous termination of labor. Such authorities preach and practice so-called prophylactic forceps. There are others of us who wholly agree with the statement made by one well-known obstetrician that prophylaxis means prevention; the only thing prophylactic forceps ever prevented was loss of time on the part of the physician and that is no justifiable indication for any operative procedure. So far as I am concerned, I have long since convinced myself that a well-conducted spontaneous delivery is the safest one and I truly believe prophylactic forceps like prophylactic version and extraction belongs in the class of operations best described as meddlesome midwifery.

Another indirect but, nevertheless, very real abuse of the forceps has come about from the excessive and injudicious use of analgesic and anesthetic drugs in labor. In the attempt to make labor painless forceps delivery is often necessary solely because the patient has been drugged to such depths that contractility of the uterine and abdominal musculature is seriously interfered with and the cooperation of the patient is completely lost. There is no doubt but that modern methods of pain relief in labor have greatly increased the incidence of forceps deliveries and the wisdom of this course is open to serious question.

It is difficult to justify the truly enormous increase in the number of forceps deliveries that has occurred especially in the last several years. When correctly used in cases where specific indications are present, the instrument is a most valuable one, but failure to realize its limitations and especially its use on questionable indications undoubtedly adds unjustifiable hazards to childbirth; its use under such conditions may constitute a veritable menace to safe and sound obstetrics.

The Abuse of Rest as a Therapeutic Agent

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RECENTLY there has been renewed interest on the part of the medical profession in problems of rest versus activity in the treatment of the sick. In the past certain great medical leaders have stressed, perhaps unduly, the importance of rest as a therapeutic measure. Three vigorous advocates of rest as a form of therapy stand out in the memory of present-day physicians. They are Weir Mitchell, Hugh Owen Thomas, and Allen K. Krause.

Mitchell's forceful espousal of the "rest cure" undoubtedly was the most influential factor in the apparent overemphasis on the importance of rest therapy in the minds of neuropsychiatrists and general practitioners of medicine. Menninger has said: "Mitchell's prestige, influence and persuasiveness were such that his 'rest cure' for the treatment of neuroses influenced American medicine for nearly fifty years."

Yet thoughtful consideration, in the light of present-day psychiatric knowledge, would tend to minimize the value of simple physical rest as a therapeutic measure in the management of the neuroses. Mitchell's conception has continued to influence the thinking of nonpsychologically minded physicians who welcomed a plausible physiologic explanation of these baffling cases, made diagnoses of "nervous exhaustion, nervous fatigue, fatigue neuroses, nervous breakdown from overwork, nervous weakness, neurasthenia and so on," and prescribed rest cures, vacation treatment, and relaxation treatment. But Menninger has pointed out that "Modern psychiatry regards this conception of neuroses and these forms of treatment for neuroses as entirely false in theory and unsound in practice."

Similarly, Thomas has probably unduly influenced orthopedists to overemphasize the therapeutic value of rest because this great orthopedist believed that an overdose of rest was impossible and never tired of repeating: "Rest must be enforced, uninterrupted and prolonged." Yet Ghormley has emphasized the fact that modern orthopedic surgeons "realizing the detrimental effects of complete rest in bed" have succeeded in shortening the periods of such confinement with consequent improvement in the results achieved.

Finally Krause, the gifted writer on the care of the tuberculous, undoubtedly has influenced physicians to emphasize the rest treatment of tuberculosis with his oft-repeated admonition: "Rest must be first, and always first, in the treatment of the tuberculous." Yet, again, re-

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cent studies suggest that carefully graded activity may sometimes be beneficial in the management of certain patients who suffer from tuberculosis.

The doubts which are now being expressed concerning the wisdom of blind and often unreasoning adoption of unlimited amounts of rest in therapy, simply because of the support given to rest therapy by great physicians of a less enlightened age, call for a careful review of modern knowledge concerning this subject.

Blind following of the great physicians of the past has always been one of the weaknesses of the medical profession. Yet in guarding against this tendency we must not hurriedly cast aside proved and valuable methods of rest therapy.

Practically every patient presents problems of a physical and of a mental nature—problems of the soma and of the psyche. Rest or activity may be physical or mental and may produce favorable or unfavorable effects on the patient.

For purposes of prescribing rest and activity, these six factors (physical and mental, rest and activity, and favorable and unfavorable effects) can be represented schematically as is shown in the table on page 86.

Considering this table we can conceive of certain formulas which will usually hold true. For example: P/R + or — = M/A —; that is, rest whether producing a favorable or unfavorable effect from a physical standpoint may produce mental activity which has an unfavorable effect on the patient.

Or we can conclude that in many instances P/A + = M/A +; that is, activity which has a favorable physical effect may produce mental activity which has a favorable effect.

Often this formula will hold: P/R — = M/A —; that is, physical rest which produces an unfavorable effect will produce mental activity of an unfavorable nature.

Finally it may perhaps be concluded that this formula will usually apply: P/A + = M/R + or M/A +; that is, favorable physical activity will produce mental rest or mental activity of a favorable sort.

It may also be concluded that this formula will *not* usually apply: P/R — = M/A + or M/R +; that is it is *not* to be expected that rest which has an unfavorable physical effect will produce favorable mental activity or mental rest.

FRANK H. KRUSEN

OUR Army physicians have realized the importance of rapid restoration, both physical and mental, of sick and disabled soldiers. Their newly developed convalescent and reconditioning programs bid fair to revolutionize the concepts of physical and mental rest and activity now extant in civilian hospitals. Not only do their programs of graded physical and mental activity keep the patients in a much more cheerful mental state than before but evidence is accumulating to indicate that such programs shorten the period of physical disability and lessen the tendency to recurrence of disease.

For example, Rusk has reported the following evidence in conjunction with the convalescent training in Air Forces hospitals:

Spot checks have shown hospital readmissions reduced as much as 25 per cent. The period of convalescence in certain acute infectious and contagious diseases has been reduced 30 to 40 per cent. One hospital reported a reduction from eighteen to eleven days' hospitalization for patients with measles and a drop from thirty-three to twenty-three days' hospitalization for convalescents with scarlet fever. A recent study of 645 cases of primary atypical pneumonia, running two parallel groups, revealed that the group convalescing in the former routine manner averaged forty-five days' hospitalization with a 30 per cent recurrence. The group that was integrated into the Convalescent Training Program and carefully supervised averaged thirty-one days' hospitalization with only a 3 per cent recurrence.

SCHEMATIC REPRESENTATION OF EFFECT OF REST AND ACTIVITY ON THE PATIENT

Physical (P)	*Mental (M)*
Rest (R) + or −	Rest (R) + or −
Activity (A) + or −	Activity (A) + or −
Rest (R) + or −	Activity (A) + or −
Activity (A) + or −	Rest (R) + or −
Usually true	*Usually untrue*
P/R + or − = M/A −	P/R − = M/A + or M/R +
P/A + = M/A +	
P/R − = M/A −	
P/A + = M/R + or M/A +	

\+ = favorable effect
− = unfavorable effect

A recent symposium on the abuse of rest indicated that rest was often harmful and activity frequently beneficial in cardiovascular disease, obstetrics, general surgery, orthopedic surgery, and psychiatric disease.

In discussing cardiovascular disease, Harrison expressed the belief that "the tendency to regard prolonged rest in bed and complete abstinence from normal economic activity" as the most important phase of management of serious forms of heart disease "may be unsound." He mentioned that John Hunter, after severe anginal attacks had developed, continued to be quite active, and lived "possibly twenty years after the onset of symptoms indicating serious heart disease," and that Sir James Mackenzie "led an active and useful life for seventeen years after myocardial infarction."

Relatively few patients die of uncomplicated cardiac failure. The three great causes of death among patients suffering from heart disease are infarction of the lungs, pneumonia, and uremia. These chief causes of death tend to develop under a state of complete rest and might be prevented to some extent by mild muscular activity. The incidence of postinfarctional neurosis is decidedly greater among persons who have been kept in bed for several months than among those who have been allowed supervised activity.

When standardized myocardial injury was induced among rats under controlled experimental conditions "excessive restriction of muscular activity was harmful, while the return to normal activity within a few days seemed to exert no detectable injurious effects." These experiments led Harrison to question seriously "the validity of current methods of handling patients with the graver forms of heart disease." He concluded that "There is no proof that rest in bed carried out for many weeks after symptoms have disappeared is of value in the physical management of the patient with congestive failure, angina pectoris, or myocardial infarction."

With regard to the abuse of rest in obstetrics, Eastman concluded that "The employment of pregnant women in industrial plants was entirely feasible and safe, provided certain safeguards could be thrown about them." He also concluded that "Whatever advantage is gained by a rest period of several years between births seems to be offset and in some respects more than counterbalanced by the aging factor."

Powers, in discussing the abuse of rest as a therapeutic measure in cases in which operation has been performed said that "Prolonged periods of recumbency in bed are anatomically, physiologically and psychologically unsound and unscientific." He thought that "Early rising from bed and walking preclude the pro-

tracted period of inertia which traditionally follows in the wake of surgery."

Powers reported his observations on the postoperative convalescence of 100 consecutive patients who were allowed to sit in a chair and to walk on the first day after major operations as compared with similar observations on an equal number of consecutive unselected patients who remained in bed for the traditional period of ten to fifteen days after operations of the same type and magnitude.

"The ambulatory patients spent 10.3 days in the hospital while those who followed the traditional convalescent program averaged 16.1 days. This represents a saving of 580 hospital bed days. . . . The average period of convalescence after early activity was 5.7 weeks; after traditional postoperative management it was 10.3 weeks." Thus the ambulatory patient "may return with comfort and safety to his usual occupation four and one-half weeks earlier than has been customary when traditional routine is followed."

The usual postoperative temperature and pulse curves were unaltered by early activity and Powers concluded: "If the temperature and pulse rate are regarded as accurate indexes of convalescence, such early activity is in no way deleterious."

There were 46 postoperative complications in the control group and only 17 in the ambulatory group of cases. Powers noted especially absence of postoperative dysfunction of the gastrointestinal tract, absence of asthenia, and striking improvement in morale among the ambulatory group of patients.

Dock, in discussing the evil sequelae of complete rest in bed, stated that in most cases they were "potentiated by anesthesia, narcotics, or other medication, or by the results of the original illness." He commented that "The effects of bed rest on the psyche are so obvious and have been so clearly described by such novelists as Tolstoi and Balzac that most laymen are well aware of this hazard of therapy."

Dock mentioned that "Bone atrophy, muscular wasting and vasomotor instability are not infrequent sequelae of bed rest, while constipation, cathartic habituation, backache, and many other chronic disabilities may appear during bed rest and persist for years or decades." He said that "Young men previously in excellent health may have pulmonary infarction within a week of an otherwise uncomplicated laparotomy or herniorrhaphy if they have been kept 'comfortable and quiet' by skilled nursing and constant medication." Dock concluded that "The physician must always consider complete bed rest as a highly unphysiologic and definitely hazardous form of therapy to be ordered for specific indications and discontinued as early as possible."

Ghormley, in discussing the abuse of rest in bed in orthopedic surgery, mentioned that an important deleterious effect of rest, from the standpoint of the orthopedic surgeon, is atrophy. "Atrophy of muscles, articular structures, bone, and skin results from prolonged rest and must be regarded as a pathologic condition." He expressed the opinion that "Much of this atrophy can be avoided by systematic massage and exercises in cases in which, for some reason or another, it is necessary to remain in bed for a long time." There is scarcely any form of disease or injury of the spinal column, pelvis, hip, or femur "in which efforts to reduce the period of rest in bed have not produced good results." Ghormley concluded that in modern orthopedic surgery "All realize the dangers of long periods of rest in bed and the effort of all forward-looking surgeons is to shorten this period."

Menninger, in discussing the abuse of rest in psychiatry, explained that "The neuroses and psychoses and other evidence of maladjustment on the part of the patient are a result of misdirected energy rather than the lack of sufficient energy." Therefore the treatment in the case of a psychiatric illness "goes beyond merely arresting any attempt at adjustment by physical exertion. It aims at the redirection of the wasted energy, the removal of the interfering inhibitions and the setting up of requisite inhibitions."

Menninger concluded: "In the sense of physical inactivity, rest has ceased to be of any importance in psychiatric phenomena. Indeed the tendency is in precisely the other direction; namely, to utilize rather than to blockade further the available energy of the neurotic or psychotic patient."

COMMENT

OBVIOUSLY it is time for us as physicians to review our conception of the therapeutic value of rest.

No thinking person would deny the great therapeutic value of rest when it is employed with discrimination, but the almost universal practice among physicians of ordering prolonged rest without discrimination is to be condemned.

A friend of mine mentioned that recently he made rounds in the hospital and asked himself as he came to each bed, "Why am I keeping this patient in bed?" He was amazed to find that in most instances he could give no rational scientific reason for keeping the patient at absolute rest in bed.

Is it not true that in many instances we keep our patients at rest in bed merely as a matter of convenience or custom?

Is it not perhaps true that we have clung too long to the habit of allowing our patients to remain completely inactive in bed, thus permitting them to become morbid and introspective and actually delaying their physical and mental recovery?

Should we not give more attention to the extreme importance of providing early graded physical and mental activity for our patients? I believe that we should.

If we civilian physicians do not do so voluntarily, public opinion, stimulated by observation of Army reconditioning programs, may force us to provide such activities.

Maj. Henry B. Gwynn, of the Reconditioning Consultants Division in the Office of the Surgeon General, has mentioned that "Reconditioning, in the simplest terms, is the scientific organization of convalescence." He pointed out that "A well rounded reconditioning program is a method of attaining, by means of a scientifically planned schedule, a happy medium between the extreme of rest of mind and body which leads to deterioration and the extreme of activity which also leads to physical and mental damage."

Gwynn recommended a program of graded physical and mental activity in the hospital which would "change the present morbid hushed atmosphere into one of cheerfulness and gayety" with a change in the emphasis in medical thinking from "pathology to therapy." He concluded: "If such a program is adopted, it means some physical changes will have to be made in most hospitals. It entails the construction of a theatre or hall, areas for physical therapy and occupational therapy, installation of a public address system, provision of an area suitable for a library, and office space for administration. Some modern hospitals undoubtedly will even have a swimming pool and a gymnasium."

We are now finding some champions of the value of therapeutic physical and mental activity to offset the old champions of the value of rest as a therapeutic measure.

It is apparent that many physicians have abused rest as a therapeutic procedure. Let us not abuse activity as a therapeutic agent. There is a logical middle ground toward which we are now groping but we will not find it until we have shaken off the prejudices and misapprehensions of the past. For the sake of our patients we must strive valiantly to achieve a correct balance between rest and activity in therapy.

The great mistake made by physicians in the past has been that they have been prone to conclude that when a patient has passed the stage of acute illness the physician's responsibility ceases. The time is about gone when a surgeon can say to his patient, "Your stitches are out—you can go home now and when you feel strong enough, go back to work," or when the internist can say, "Your temperature is now normal, you can get out of bed and rest a while and then return to your occupation."

Physicians and surgeons must give increased attention to the scientific management of convalescence. They must remember that reconditioning of the sick or disabled person begins at the moment of disability and ends only when the patient is completely readjusted in a suitable normal activity. The management of this period of transition from sickness to health is the physician's responsibility.

I believe that each physician should make a practice of doing as my friend did and ask himself, "Why am I keeping this patient in bed?" If the answer is "I do not know," then the physician should think of the table which I have presented and consider the feasibility of providing graded physical and mental activity as compared with the advantages or disadvantages of continued physical and mental rest.

Keep in mind the psyche as well as the soma, and prescribe from day to day a scientific program which balances activity with rest. Do not condemn the modern ideas concerning convalescent activity simply because they seem strange and unorthodox to you.

Elbert Hubbard has said: "Man is generally down on that which he is not up on." It behooves us as civilian physicians to get "up on" the amazing new concepts concerning convalescent activity now being demonstrated in our Army hospitals. Only in this way can we escape the growing and apparently justifiable criticism that we are abusing rest as a therapeutic agent and that we are "down on" the more modern trends in medicine.

Photo from: The Bettmann Archive

Wayside diagnosis. After a painting (English School).

Spoiled Children

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THE term "spoiled child" usually refers to an aggressive, disobedient, disrespectful youngster, whose behavior is disturbing to adults; the child obviously knows this to be true. The usual explanation is that the child has received too much attention and the commonly prescribed treatment is corporal punishment, which as you know, does no good. It is important to understand, therefore, the reasons for the misbehavior of these unhappy children and a brief analysis of a few cases will help.

The first case is that of a 9-year-old boy who was brought for examination as a behavior problem. He cried a great deal and threw temper tantrums. A few days before he was brought to the office, he threw himself on the sidewalk, kicking and crying, because his mother expressed the wish to sit in the front seat of the car on the way home from the movies, rather than in the rear seat with the patient as he wanted. The boy was doing poorly in school even though he was of high intelligence. He did not get along with other children because he would not play fairly in games.

This boy was born seven years after the marriage of his parents and was wanted very much. His parents were very apprehensive lest something should happen to him. Being the only child in the family, he received all the attention of his parents, four grandparents, and four uncles and aunts. He was used as an emotional outlet by all of them and thus received far more affection than he needed. He was not allowed to do things for himself, being fed, bathed, and entertained by all of them. John's speech was infantile; he curved his tongue and lips in a sucking manner when he talked. He had nightmares in which he was being taken away (kidnapped).

We have in the above case an overindulged and overprotected boy, who was not allowed to grow up and do the things appropriate to his age. He remained infantile in his speech and behavior. His parents lost all control over him. He was disliked outside his home; he was an insecure, confused, apprehensive, maladjusted, and unhappy boy. His emotional needs were not met because of the parents' apprehension, and he did not develop self-confidence because he was not allowed to do things he was able to do. He was a spoiled youngster.

The second case is that of a 9-year-old boy who could not be controlled. He fought his younger brother, broke the furniture, stole money, refused to obey, threw temper tan-

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trums, made unreasonable demands, especially in the presence of guests, and fought with his associates. He was restless and disturbed his classmates in their studies. In spite of high intelligence, his grades were poor.

This boy was a restless, active baby, who was held to a strict food schedule. His mother began toilet training when he was six months of age, but he continued to soil himself irregularly until he was a year old and occasionally until 3 years of age. He wet the bed until he was nearly 4 years of age. He was a very active, curious youngster who would not obey when he began to walk and his parents felt that obedience was very important. "We have tried everything but it makes no impression on him," stated his mother.

At subsequent interviews, this boy's mother stated that she "never felt the same towards the patient as she did her other boy, who was always sweet and never caused her any trouble." His father related how he was forced to mind by a severe father and he himself did not believe in spoiling kids. We have then a patient who was at least partly rejected by his mother, and whose parents did not recognize that he was a smart, curious, alert, and aggressive boy, unable to meet the standards of behavior which they set up for him. He rebelled against these standards and, believing he was no good and not wanted, he was compelled to do things for attention for which he was punished.

The third case which I would like to summarize briefly is that of a little girl, 26 months old, who following a week in the hospital, developed crying spells during the night and temper tantrums during the day, and refused to eat or to go to the toilet; punishment had been tried but it did no good. Her mother stated that everyone felt the little girl had been spoiled by the nurses at the hospital. The child had eaten some capsules which were thought to contain a small amount of mercuric cyanide. Her mother became very frightened and rushed her to the hospital, where her stomach was washed. She was kept in the hospital for a week because of the danger of effects from the drug. During this time her mother saw her but twice and the child cried a great deal during both visits.

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In this case the mother was instructed to give the little girl a great deal of affection, including rocking her for a couple of hours a day and especially before she put her to bed at night. The child improved within a few days and her behavior was normal within a couple of weeks. This patient, who might have been called spoiled or a tyrant, was cured of her misbehavior by a method that most people would call spoiling her.

THE reason for the behavior described in these 3 cases becomes obvious when we recognize the requirements for normal emotional growth. From birth babies require adequate food and adequate physical care in order to stimulate maximum physical growth. In an analogous manner, they have emotional needs which have to be met in order to promote nor-

mal emotional growth; they must receive an adequate amount of affection from their parents, who want them in the first place and who accept them as they are in the second place. In addition they must be allowed to grow up in terms of their own individual patterns.

The food schedule, the amount of food, the amount of affection, and the activity of babies differ, since these factors depend on the innate patterns of rhythm of the individual baby. If a child's emotional needs are not met or his individual innate patterns of growth are not recognized, he may respond by aggressive, unreasonable demands and stubborn behavior that we call spoiled; or if from birth, the child is surrounded by apprehensive parents who use him as an emotional outlet (as in the first case), he does not grow up emotionally and becomes an infantile, unhappy, confused, apprehensive, demanding youngster whom we call spoiled. In both situations the child does not receive the security he requires and is not allowed to grow up according to his individual pattern of growth.

We can close with a point on which I am sure we all agree. An individual who receives what he needs in the world is never a tyrant. This applies to infants, children, and adults.

INFLUENZA VIRUS

At a recent meeting of the Philadelphia Section of the American Chemical Society, Dr. Wendell M. Stanley spoke on the composition of influenza virus. This virus is responsible for one of the three greatest pandemics within the knowledge of man, the influenza pandemic of 1918, in which 500,000,000 persons were stricken, and 15,000,000 died. But it won't happen again, Stanley believes, because of the highly purified influenza vaccine that was developed during War II.

The influenza virus has interesting characteristics. Unlike the tobacco mosaic virus, it cannot be obtained in crystalline form, nor does it have a constant chemical composition. Apparently, this virus has certain basic components, but its antigenic structure depends upon the host from which it is obtained. Two different strains of the virus may have no immunologic relationship, and may even contain significant differences in their amino acid contents. These differences undoubtedly have arisen through the process of genetic mutation, whereby not only is the morphology of the individual cell altered, but likewise its more intimate chemical composition.

This view is of considerable academic and speculative interest, because the virus is regarded as one of the "links" between living and non-living matter. There is still some dispute as to whether a purely crystalline substance, such as the tobacco mosaic virus, can be considered "alive." Stanley's work, and others of its type, demonstrate the mutual dependence that exists between biological activity and chemical structure.

DIAGNOSTIC CLINIC

Surgical Lesions of the Chest

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BRONCHIECTASIS, by definition, is a dilatation of the bronchial tubes. I am going to discuss only that type of bronchiectasis which has a childhood history, and not the secondary type acquired in the adult secondary to inflammatory disease, either pleural or parenchymatous, or secondary to tumors or other lesions in the chest.

The childhood type of bronchiectasis is of importance in many respects, first as to the onset, which is quite often shrouded in mystery. We are apt to see the child at the age of eight, ten, or twelve, with a history of a long-standing cough dating back to an indefinite time. By persistent probing of the parents we may get a history which shows that at the age of two, four, or six, or at some other early age, the child had a pneumonia (it may have been one accompanying acute exanthemata) and that since that time the child has coughed. Usually there have been no constitutional symptoms. Then at puberty, or just before, the child has a more severe attack of coughing and perhaps runs fever and has some constitutional symptoms. It seems that "spitting" becomes a stylish thing around puberty, and it is noticed that the child begins to expectorate large amounts of material. Previous to that time the child may have had sputum but probably swallowed it.

Sometimes this sputum is foul smelling; other times it is not. Sometimes there is some hemoptysis; in other cases there is not. Sometimes the child is a little under par, doesn't eat well, is a little undernourished; sometimes there are no constitutional symptoms.

The question that is posed for the thoracic surgeon or for the medical man, who has seen the child and has established the diagnosis of bronchiectasis, is: "What will we do about it?"

The accompanying figures illustrate some of these points.

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NOTE: Presented before the meeting of the Interstate Postgraduate Medical Association of North America, Cleveland, Ohio, October 15 to 18, 1946.

TYPES OF BRONCHIECTASIS

Figure 1 illustrates diagrammatically the various types of bronchiectasis as we see them. Our knowledge of bronchiectasis really starts from the use of bronchograms back in the early twenties. Previous to that time, the diagnosis could have been guessed at from the clinical symptoms, but the ordinary x-ray rarely shows it definitely. It is only by filling the bronchial

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tree with some radiopaque substance that the structural detail can be brought out.

The structural type of bronchiectasis (Figure 2) is of some importance. The saccular type is apt to be more serious than the cylindrical type, although this is not entirely true. Clinically we can divide bronchiectasis into simple bronchiectasis in patients who have a moderate amount of mucoid expectoration with no constitutional symptoms and with very few progressive symptoms, and the foul type, where the patient has a larger amount of expectoration with odor to it. The latter type is particularly important during early youth because it makes these patients social outcasts: at school other children shun them; they may become anti-social, and these factors all may lead to certain psychological developments.

Next we have the so-called dry type of bronchiectasis in which the chief symptom is hemorrhage. This may come on out of a clear sky. Hemorrhage may be associated with the other types, but it may be the only or the predominating symptom. Hemoptysis often comes in episodes with no warning; there may be intervals of a year in between, and even after we remove the tissue we may have a very difficult time determining why the patient bled so copiously.

Finally we have the septic type of bronchiectasis in which there are the local symptoms, such as expectoration and hemoptysis and, in addition, constitutional symptoms, fever, malaise, and loss of weight.

While all those types are not absolutely differentiated, this type of classification in a general way divides the patients into the clinical types as we see them.

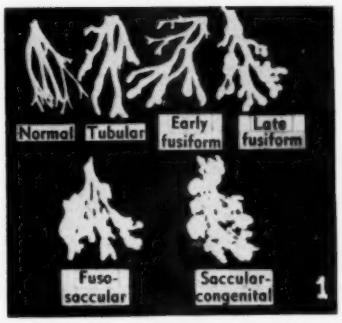
CASE REPORTS

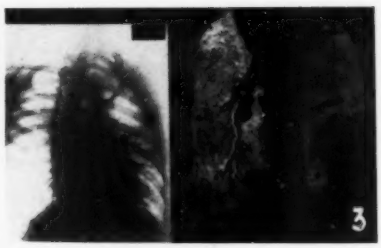
Figure 3 is a picture of a boy, 17 years old, who at the age of seven had pneumonia. He had persistent cough productive of about a half cup of sputum daily, occasionally foul. He had slightly decreased exercise tolerance, but no other symptoms.

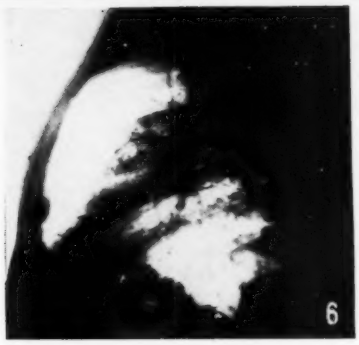
On physical examination there were a few râles at the left base, and bronchograms showed involvement of the left lower lobe and the lingula of the left lower lobe. The involvement of the lingula is very important because in about 80 to 85 per cent of the cases that have bronchiectasis of the left lower lobe there will also be involvement of the lingula of the upper lobe. If this is not removed at the same time that the lower lobe is removed, the patient will have residual symptoms.

This patient had a left lower lobectomy and lingulectomy. There is a cylindrical bronchiectasis of the left lower lobe, and lingula, and the patient has made a satisfactory recovery. This is a relatively uncomplicated type.

One thing that we have noticed regarding childhood bronchiectasis is that it rarely spreads. The patient may have great variation in symptoms and may have great variation in the amount of sputum, but, when bronchograms are done repeatedly over a long period of time, it is rarely found that the disease has spread to any other part of the lung than was







observed in the beginning. If the disease starts in the left lower lobe it usually remains there and we rarely see a progress to the right lower lobe or the left upper lobe. The patient may have repeated attacks of pneumonia with pulmonary infiltration, which clears with some scarring, but the spread of the actual bronchiectasis is rare in the childhood type. What is seen in the beginning remains so throughout the course of the disease, at least as long as it is under our observation.

The case of a young girl, 18 years old, who had measles at the age of seven, followed by persistent cough and occasional pneumonia, is shown in Figure 4. She has had foul sputum, no hemoptysis, remains somewhat underweight; she raised about a cupful of thick, greenish sputum daily; she had some clubbing of the fingers in addition to signs of moisture in the bases of both lungs.

The bronchograms showed bronchiectasis of both lower lungs, the fusiform, saccular type of bronchiectasis.

With multiple lesions and with multiple lobes involved, the question of treatment sometimes is difficult. In this case it was decided to attack the patient's right lower lobe and right middle lobe. It was found at that time that she had not only involvement of the right lower and middle lobes, but that part of the upper lobe was involved on the right side, so that it was necessary to remove the right lower, the right middle, and part of the right upper lobes. She had a somewhat stormy course and her future, of course, is in doubt. With that much lung removed from the right side it will be

difficult to remove any lung from the left side.

In some cases where there are two lobes or even three lobes involved, we can remove these lobes at separate stages, as children have a great respiratory reserve, and in addition, great power of compensation.

A CASE of dry bronchiectasis with hemoptysis as the presenting symptom is shown in Figure 5. This patient at the time we saw him was 25 years old and had been admitted to the hospital five times with severe hemoptysis. Between these episodes of hemoptysis he felt well, though he had a slight non-productive cough. He had all the usual procedures for diagnosis. Bronchoscopy after the hemoptysis was negative, and the bronchograms showed consolidation in the right middle lobe. Tests for tubercle bacilli were negative.

The bronchogram of Figure 6 shows the right middle lobe atelectatic, but the bronchograms of the rest of the lung were negative. We did not know the source of the bleeding. On the final admission he was bronchoscoped during the hemorrhage, and it was found that the blood was coming from the right middle lobe bronchus. A local bronchogram was made of this bronchus, which showed very slight dilatation but it definitely was the source of the bleeding. The right middle lobe was removed and showed a minimal amount of bronchiectasis. However, the patient has not bled since. That was eight years ago. The pathologic examination showed a peripheral bronchiectasis of the right middle lobe without any definite source for the bleeding.

That has been the experience we have had again and again. A patient has repeated bouts of severe hemoptysis and by bronchograms we cannot determine the source of the bleeding. It is necessary in those cases to bronchoscope the patient during the bleeding episode in order to determine the source. If this hemoptysis is severe and repeated, it may be necessary to remove that portion or lobe of the lung on the basis of the bronchoscopic finding.

Upon examination of the pathologic specimen, we are sometimes at a loss to explain the source of the bleeding. It is much like nose bleed where there may be large dilated veins underneath the mucous membrane that will not show on the pathologic specimen.

Figures 7 and 8 show the case of a boy, 13 years old, who had pneumonia at the age of seven and had another bout of pneumonia a few years after. Following this, he developed severe cough and expectoration, with occasional hemoptysis. The sputum was foul smelling at times. He was in the hospital for several weeks with another attack of pneumonia, and just before we saw him he had rather severe hemorrhage. His exercise tolerance was definitely diminished. Sputum averaged about a cup a day. Again this is a history going back to childhood, with so-called pneumonia and persistent cough with repeated exacerbations of infection.

Bronchoscopy showed some dilatation of the right lower lobe bronchus and some purulent sputum coming from the right lower lobe. There was no evidence of foreign body at that time. Lipiodol showed a cylindrical saccular bronchiectasis of the right lower lobe.

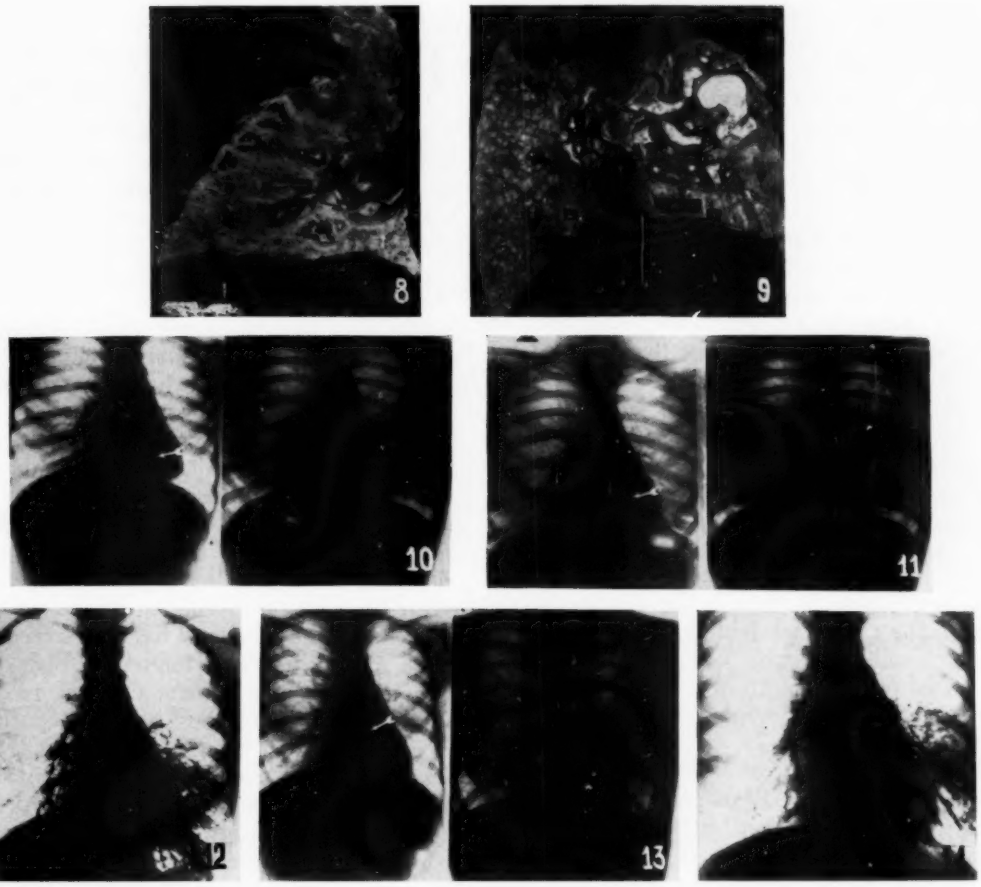
He had a right lower lobectomy. The specimen showed marked dilatation of the bronchi, but much to our surprise, in one of the distal bronchi there was a little piece of Christmas tree which this child at some time in the long history had aspirated. Whether this was the cause of the bronchiectasis, we do not know because there was no memory on the part of the child or the parents as to when this might have happened.

We must always be on the lookout for foreign bodies as the contributing factor or as the primary factor in bronchiectasis.

PROGNOSIS

Very rarely do we have a patient come into the chest clinic over the age of forty with a childhood history of bronchiectasis.

Spontaneous cures of this disease, we feel from our observation, are rare, so either these patients have become so accustomed to the dis-



ease that they do not come to the clinic or they have died. If they have died, of what did they die? We must assume that those who died probably were classified as pneumonia at the time of death. They had a severe pneumonia that did not respond to ordinary therapy, and were so classified. How frequently that happens is hard to say, but it must be fairly common. On the basis of our present knowledge we would have to give a very guarded prognosis, as to length of life, to any individual with a childhood history of bronchiectasis.

This is of importance in considering the treatment of these patients. We know that they can be symptomatically improved by postural drainage, by the temporary control of infection, the use of penicillin and streptomycin, the use of aerosol and various other forms of inhalation, and with these measures some of them can be kept under control for a considerable period of time. These drugs are particularly important during acute episodes and periods of infection. You cannot, of course, cure bronchiectasis in this way, because it is a structural deformity at the time we see it and we cannot bring the bronchi back to normal.

The symptoms in bronchiectasis can change very quickly. There is no disease that I know

of where patients can be so well one day and so sick the next, due chiefly to retention of sputum or to hemorrhage. It is a very unpredictable disease. Seeing the patient at any one time, we are unable to predict what that patient's condition will be a week hence. This makes it very difficult to advise parents regarding the treatment of the disease. We do know that lobectomy in cases that are limited to one or two lobes in children carries a very low mortality rate, and a very low morbidity rate in the child. The operation has practically no effect on the vital capacity or exercise tolerance. As the patients get older, the mortality risk increases, and the compensation is not so complete.

The specimen of a little girl whom we observed over a long period of time is shown in Figure 9. The patient was 7 years old when she was first admitted in 1931. There was no previous illness until four weeks before admission, when she began having fever, slight hemoptysis, and cough. She was in the hospital for 285 days. She came back with persistent low-grade fever and persistent cough. Bronchoscopy showed pus coming from the right main stem bronchus. X-ray showed diffuse cloudiness of the right lung, finally with some clearing at the base, and persistent atelectasis of the upper lobe on the right. Diagnosis at that time was lung abscess and bronchiectasis. Lipiodol fillings were not successful.

She was readmitted six years later. Following her previous discharge, the patient had been well until two weeks before this admission, when she developed a chest cold and mild cough. At five o'clock of that day she had severe hemoptysis, the hemorrhage continuing in the hospital in spite of transfusion, and on the day following she had hemoptysis of one to two ounces and suddenly stopped breathing.

That child was observed, off and on, over a period of six years and died suddenly. It can be seen that the lung is practically destroyed. It consists of a spongy network of tissue filled with a blood clot. After her initial illness this child went on for some six years in moderately good health and then had this dramatic exodus with hemorrhage.

PATHOGENESIS

The remaining illustrations show some aspects of the pathogenesis of bronchiectasis.

Figure 10 is of a girl, 12 years old, who was first seen in 1930 with cough and expectoration. She had had pneumonia four years previously. In 1930, the first films showed atelectasis of the left lower lobe. The film shows the triangular shadow, with clearing eight months later. In 1931 she had the same phenomenon, with later clearing.

The same phenomenon is seen in Figure 11 —atelectasis, with clearing seven months later.

In February, 1934, the bronchograms were done (Figure 12) showing incomplete re-expansion of the left lower lobe, but no true bronchiectasis. The patient at present has no symptoms. We have here a patient who had episodes of atelectasis of the lower lobe without the development of true bronchiectasis. However, there is an incomplete re-expansion of the left lower lobe. This patient has not been x-rayed since 1934, but she has been seen in the clinic and has had no symptoms.

Figure 13 is of a patient who was 12 years old when first seen. She had cough, purulent expectoration, and bronchoscopic drainage. In 1925, again atelectasis of the left lower lobe is shown, with re-expansion soon afterward. The cough persisted during this time, and a film made in 1933 (Figure 14) shows marked bronchiectasis of the left lower lobe.

I believe this phenomenon of atelectasis and either expansion or lack of expansion may be a very important thing in the pathogenesis of bronchiectasis. I believe if children were x-rayed routinely after pneumonia and if, in all cases of atelectasis, a persistent effort were made by bronchoscopic drainage, postural drainage, and encouragement of cough to re-expand that lobe, in some cases development of bronchiectasis might be prevented.

I can just say in closing that bronchiectasis in childhood is a serious disease that many times is not recognized, and the only definitive treatment we know now in selected cases is lobectomy.

DIAGNOSTIC CLINIC

Diseases Commonly Confused with Acute Coronary Occlusion

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During the past ten to fifteen years coronary artery disease has received much emphasis in medical literature. At the present time the average physician considers the possibility of coronary disease whenever he is confronted by a patient complaining of pain in the chest or by a patient in circulatory collapse. Even the patient, in this enlightened day, is familiar with the prognostic implications of acute coronary occlusion.

When a diagnosis of acute coronary occlusion is made, a period of four to six weeks of bed rest is usually required, with a total period of about three months before full activity is resumed. All of us know that cardiac neurosis frequently complicates acute coronary occlusion; it is obvious that such a neurosis may complicate a mistaken diagnosis as well as an accurate one. It behooves us, therefore, not to make this diagnosis without reasonable proof that it is correct.

Most physicians recognize acute coronary occlusion with creditable accuracy. Today it is probably fairly uncommon for coronary occlusion to escape the attention of the doctor. We have reached the place, however, where the diagnosis is made too frequently. Unfortunately, the diagnosis of coronary occlusion often is made in patients with normal hearts. Oftentimes the diagnosis is made in people who have curable or unimportant diseases which are followed by no disability and require no bed rest. An incorrect diagnosis under such circumstances may precipitate great anxiety and lead to much loss of time and income.

All of us have heard a great deal about variations in the typical histories presented by patients with angina pectoris or coronary occlusion. We have heard also of many variations in the usual electrocardiographic patterns, so much so that we are tempted to make the diagnosis in a number of patients whose histories and electrocardiograms bear only a superficial resemblance to acute myocardial infarction. It is perfectly true that there is a wide variation in the histories obtained from such patients, but the doctor should consider other diagnostic possibilities whenever the history deviates from the typical one. It is particularly important to consider other possibilities when the electrocardiogram fails to provide full proof that myocardial infarction has occurred.

Let us review the typical histories given by patients who have angina pectoris or coronary artery occlusion. Most of you are perfectly

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familiar with the things I am going to say about these two disorders.

ANGINA PECTORIS

Angina pectoris is ordinarily precipitated by physical effort or emotion. The pain is situated in the retrosternal area, behind the upper, middle, or lower portions of the sternum. The use of the term "precordial" in describing the location of the pain in angina pectoris is to be discouraged, as pain in the region of the apex of the heart usually has an origin other than in the coronary arteries. Radiation, when it takes place at all, is likely to be to one or both sides of the neck as far as the angles of the jaw, to one or both shoulders, or to one or both arms. Radiation to the arms is likely to involve the ulnar aspect, sometimes traveling as far as the little fingers. Ordinarily the pain does not radiate to the back, although there are a number of exceptions to this rule. The pain behind the sternum has a distinctive quality and is one of oppression, tightness, or fullness; it is sometimes a crushing pain and sometimes a burning one. It is not a sticking or stabbing sensation.

The pain is by no means necessarily severe. Most of us get the impression from textbooks that the pain is about as severe as the human being can bear. Many patients, when the doctor refers to their discomfort as pain, will correct him and say, "Doctor, this not a pain at all; it is just a sensation of tightness in my chest."

Again from the textbooks one gets the impression that the pain of angina pectoris strikes with full intensity at the onset. This has been notably not the case among patients I have questioned in detail. Almost invariably the pain begins very gradually, increases gradually over a period of a few seconds or a minute or so, then reaches its maximum intensity and strikes a plateau on which it continues until the patient stops the effort which precipitated it. Subsidence, like the onset, is gradual. Ordinarily pain lasts for a period of one to three minutes, sometimes as long as five. It is not a momentary pain; neither is it prolonged. It is important to remember, however, that a patient suffering fairly severe pain may lose his appreciation of time so that he will occasionally describe a pain lasting one minute as having a duration of five or even ten minutes.

Upon subsidence of the pain of angina pectoris, the patient returns to his previous state of well-being and is none the worse for having experienced it. This is in sharp contrast to the patient who has suffered closure of a coronary artery.

The electrocardiogram is ordinarily normal in patients with angina pectoris who have not yet suffered from myocardial infarction. If an electrocardiogram is made during pain, however, one frequently sees transitory depression of the RST segments with prompt return to normal as pain subsides.

ACUTE CORONARY ARTERY OCCLUSION

The pain in acute coronary occlusion is identical in location, radiation, quality, onset, and offset to the pain of angina pectoris. It is likely to be more severe, but again the sensation may be simply one of pressure in the chest. The pain is prolonged in contrast to angina pectoris, lasting twenty or thirty minutes, an hour, several hours, or even a full day. One can be reasonably certain that a patient with angina pectoris who develops an identical but prolonged pain lasting one-half hour or more has suffered obstruction of a coronary artery. Physical exertion is not an important factor in the precipitation of acute coronary artery closure. Whether the patients are awake and working, awake and resting, or asleep in bed has little bearing on the frequency with which coronary occlusion begins.

After acute coronary occlusion the patient, in contrast to the patient with angina pectoris, does not ordinarily return to his previous state of well-being. If his attack is a severe one, he will develop weakness, sweat, and sometimes nausea and vomiting. His blood pressure is likely to fall and he may go into shock. His

heart rate is usually increased. He develops fever, leukocytosis, and acceleration of his sedimentation rate. He is practically certain to develop serial electrocardiographic changes which are diagnostic of acute myocardial infarction. These changes are about as pathognomic of infarction of the heart as anything in medicine comes to being pathognomic. It is most wise not to be tempted to read myocardial infarction into an electrocardiogram showing only minor variations from normal.

There is an important exception to what we have said so far regarding the duration of pain in angina pectoris. During recent years we have become familiar with the fact that about half of the patients during the few days or weeks preceding acute coronary occlusion develope premonitory symptoms in the form of an increase in the frequency, severity, ease of precipitation, and duration of their anginal pain. Under such circumstances the pain may occur even at rest and may last for ten to twenty minutes at a time. Studies during this period will fail to reveal proof of infarction of the heart until a major episode takes place.

ACUTE PERICARDITIS

In the past ten years we have learned much about the clinical and electrocardiographic characteristics of acute pericarditis. Much of this knowledge is due to Dr. Arlie R. Barnes of the Mayo Clinic. It is important to recognize this entity since much of the acute pericarditis we now see is of the so-called benign type complicating respiratory infections. This type of pericarditis ordinarily is fibrinous and not followed by pericardial effusion or pyopericardium. Recovery is complete and leaves no cardiac or other disability. It is most important not to make the diagnosis of coronary occlusion when this benign and self-limited disease exists.

Fairly frequently patients with benign pericarditis experience severe anterior chest pain beginning during or a few days after a respiratory infection. The infection may be a mild one in the form of a simple sore throat or a cold. Pericarditis may, of course, complicate more serious respiratory infections such as pneumonia. The pain is likely to be situated in the retrosternal area and may at times closely resemble the pain of acute coronary occlusion. It may even radiate through the usual pathway. Usually a pericardial friction rub is heard, and this may be erroneously taken as confirmation of a diagnosis of acute coronary occlusion with anterior myocardial infarction. Usually fever, leukocytosis, acceleration of sedimentation rate, and serial electrocardiographic changes are present.

When pain is a part of the syndrome of acute benign pericarditis, it is likely to be the initial symptom of the complication and to attain its full intensity at the onset. Very frequently there is an inspiratory increase in pain, as in pleurisy, which is probably due to adjacent pleuritis; this inspiratory increase in pain, as well as the sudden onset, may help in differentiating it from acute coronary closure. It is rather common for the pain of pericarditis to be radiated through to the interscapular area; we have emphasized that this is usually not a feature of acute coronary occlusion.

The pericardial friction rub deserves some mention. After anterior myocardial infarction the friction rub, if heard at all, is likely to be heard on the second, third, or fourth day following coronary closure. In patients with acute pericarditis the friction rub is likely to be heard when the patient is first seen by the physician, even during the early hours of the pain; this is an important differential point.

Although the electrocardiogram bears a superficial resemblance to that of acute myocardial infarction, there are many important differences. In the acute stage the RST segments are likely to be elevated in all leads, rather than showing reciprocal elevation and depression in leads 1 and 3 as in the case of acute myocardial infarction. Later in the course of pericarditis, inversion of the T-waves in all leads is likely to occur. Ordinarily there is no alteration of the QRS complexes in acute pericarditis except that there may be slight lower-

ing of voltage; characteristic Q-waves do not appear as in the case of myocardial infarction.

PULMONARY EMBOLISM

Pulmonary embolism is frequently diagnosed as acute coronary occlusion. Although the predominant symptoms and signs of massive pulmonary embolism are dyspnea, cyanosis, and circulatory collapse, oppressive pain behind the sternum may be a feature in patients able to give a history. After a few days when pulmonary infarction has followed, the pain is likely to be on one side of the chest and to be inspiratory in nature.

In patients who have nonfatal pulmonary embolism, there is likely to be fever, leukocytosis, and acceleration of the sedimentation rate. The electrocardiogram frequently shows characteristic changes, which again superficially resemble those of posterior myocardial infarction. There are important differences, however, including a prominent S-wave in lead 1 and inversion of the T-wave in lead 4F. The large Q-wave and inverted T-wave in lead 3 is rather similar in both conditions, but the differences should make the diagnosis apparent.

Of great importance in the recognition of pulmonary embolism is a history of preceding phlebitis, varicosities, a surgical operation, usually in the pelvis, trauma to the legs, and pregnancy. All of us know that an interval of nine or ten days is likely to elapse between pelvic surgery or delivery before pulmonary embolism occurs, yet too often this fundamental fact is overlooked.

PREMATURE BEATS AND PAROXYSMAL RAPID HEART ACTION

Brief mention should be made of premature beats or extrasystoles as a cause of anterior chest pain. Especially in nervously sensitive people, premature beats may be associated with a momentary, sharp, sticking, or stabbing pain usually located near the apex of the heart. Occasionally radiation takes place to the left shoulder and arm. An important point is that the pain is momentary and does not last the one to three minutes usual in angina pectoris. One may get a confusing history of the duration of pain, however, as the momentary stab is frequently followed by a variable period of precordial aching, usually situated near the apex and lasting for a few minutes or even all day in an unusually sensitive person.

Quite frequently patients with paroxysmal tachycardia, paroxysmal auricular flutter, or paroxysmal auricular fibrillation have discomfort in the front of the chest. Usually the discomfort is not particularly painful, but it may be a sensation of oppression or fullness behind the sternum. If the rate is rapid and long sustained, the patient may go into circulatory collapse; he may become pulseless, may have no obtainable blood pressure, may develop a cold, clammy sweat, and may present a picture closely approximating that of acute coronary occlusion.

Occasionally patients with paroxysmal rapid heart action are entirely unaware of the fact that the heart is beating rapidly. Such a patient, complaining of anterior chest oppression and presenting the picture of circulatory collapse, may easily be regarded as having acute coronary occlusion.

It is most important to recognize paroxysmal tachycardia because of its frequent occurrence in hearts that are structurally normal. Appropriate treatment may prevent subsequent paroxysms and permit the individual to lead a perfectly normal life.

NEUROCIRCULATORY ASTHENIA AND CARDIAC NEUROSIS

Patients with neurocirculatory asthenia or cardiac neurosis frequently describe anterior chest discomfort which may confuse the doctor. Ordinarily the pain is situated about the left breast near the apex of the heart and is not in the retrosternal area. The discomfort is usually prolonged, lasts for hours at a time, and is unaltered by physical exertion. Frequently it is associated with precordial tenderness, a rare finding in the patient with angina pec-

toris or coronary occlusion. Such patients usually complain of excessive fatigue despite adequate rest, and may present symptoms and signs of vasomotor instability such as tachycardia, dizziness, faintness, and variations in blood pressure.

HYPERVENTILATION SYNDROME

Patients with the hyperventilation syndrome and normal hearts frequently are diagnosed incorrectly as having coronary occlusion. This syndrome is probably always a part of an anxiety neurosis. The predominant symptom is one of breathlessness which occurs without any close relationship to physical exertion. Sometimes the breathlessness is extreme and is described as suffocation, inability to draw the breath all the way down, or gasping. In occasional instances the degree of hyperventilation is so slight that the patient is not conscious of his overbreathing, or it may take the form of sighing respiration.

Pain in the front of the chest may be a part of the symptomatology of such patients. Usually the pain is situated about the left breast or in the left pectoral region and frequently takes place in the form of repeated spasms or grabbing sensations. Occasionally the pain may so closely resemble that of acute coronary artery occlusion as to be indistinguishable.

There are always other symptoms and signs of the hyperventilation syndrome when an adequate history is taken. Detailed questioning will reveal the presence of an anxiety neurosis. The breathlessness differs from that of true cardiac dyspnea in that it is unrelated to effort and is almost never associated with wheezing or coughing. Other symptoms are lightheadedness, dizziness, faintness, fainting, spots before the eyes, numbness and tingling about the lips and in the fingers, tachycardia, heightened muscular irritability, hyperactive reflexes, tenseness in muscles, tremulousness, and, when the symptoms are fully developed, carpopedal spasm with positive Chvostek and Trousseau signs.

Patients who hyperventilate frequently have marked electrocardiographic alterations in the form of lowered T-waves and sometimes there is complete inversion involving all leads. The electrocardiogram returns to normal as the attack subsides, but the abnormalities may be reproduced later by directing the patient to hyperventilate.

OTHER DISORDERS

Patients with such disorders as cervical rib, scalenus anticus syndrome, and compression of sixth cervical intervertebral disc commonly describe pain on the lateral aspect of the neck, frequently spreading to the side of the head, the shoulder, and even down the arm. Sometimes the pectoral region and scapular area are involved. Retrosternal pain is rare. A confusing history may be obtained from the patient who says that his pain is induced by such effort as walking. Close questioning will usually show that at such times the patient is carrying a weight in the hand on the affected side, thus increasing the tension on the brachial plexus and inducing pain. Digital pressure over the scalenus anticus muscle will ordinarily reproduce the typical pain in a patient with this syndrome. X-ray study should reveal the presence of a cervical rib. Patients with compression of the sixth cervical disc frequently have radiation of pain to the thumb and index finger, rather than down the ulnar side of the arm as in the case of angina pectoris. The injection of lipiodol into the spinal canal may be necessary to make a diagnosis of compression of the disc.

Patients with subdeltoid bursitis are occasionally diagnosed as having coronary occlusion. Pain is usually most intense over the subdeltoid bursa but frequently spreads as far as the neck, scapular area, pectoral region, and down the arm. Usually there is tenderness over the subdeltoid bursa. The obvious limitation of motion of the shoulder should give a clue to diagnosis.

Many of you have had spasm of the cardiac

end of the stomach or lower portion of the esophagus when under great nervous strain. Often the discomfort follows the drinking of cold liquids. The discomfort is usually situated over the xiphoid process and lasts for fifteen to thirty minutes or more. It is not precipitated by effort and lasts longer than angina pectoris. Frequently there is a history of dysphagia at such times.

Patients with herniation of the cardiac end of the stomach through the esophageal hiatus occasionally give a history resembling that of acute coronary occlusion. I once saw a doctor who had had severe pain over his xiphoid on several occasions; he described his condition in a way that made me believe he had suffered acute coronary occlusion despite the fact that serial electrocardiograms were normal. On one occasion I had the good fortune of seeing him during pain, at which time he had tympany where one would expect to find precordial dullness. This clue led to gastrointestinal x-rays which revealed a hiatus hernia with displacement of the heart. His rapidly developing cardiac neurosis was thus dispelled.

CONCLUSION

This discussion makes it apparent that there are many conditions capable of producing anterior chest pain or circulatory collapse thereby suggesting the possibility of angina pectoris or acute coronary occlusion. Many of them are relatively unimportant diseases, curable diseases, or diseases which should produce no disability. This list is not a complete one. It is most important to observe that the differential diagnosis may in almost every instance be made entirely on the basis of the history.

In these busy days there is a great tendency on the part of the doctor to take the chief complaint of his patient and then, without going into the history in detail, order such laboratory work as x-ray of the heart, electrocardiogram, blood count, and sedimentation rate. The electrocardiographic interpretation may be returned to the doctor with some such nondescript term as "myocardial damage." The doctor then accepts this as evidence of heart disease, institutes treatment, and never takes a full history.

Let me emphasize the importance of a complete history before laboratory studies are made. Let me emphasize again the fact that, although there are variations in the typical histories presented by patients with angina pectoris and coronary occlusion, the histories usually are reasonably typical. When the history varies from the expected one do not make a diagnosis of coronary disease without adequate proof. Remember that a cardiac neurosis may be as disabling as coronary occlusion itself.

DIAGNOSTIC CLINIC

Procedures in Office Urology

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THE ENDOCRINE MANAGEMENT OF CARCINOMA OF THE PROSTATE

This discussion of the endocrine management of carcinoma of the prostate is based upon observations of approximately 50 patients who had satisfactory follow-up examinations.

The oral administration of stilbestrol in general is quite satisfactory, but at the onset of treatment it may be advisable to administer the drug parenterally to assure a prompt response. This has some advantage through obtaining a better cooperation of patients. Most male patients tolerate this drug very well; in a few instances, however, there has been evidence of hypersensitivity to the drug, and here it was discontinued and orchiectomy performed. A few patients have had some gastrointestinal disturbance but usually not sufficient to require discontinuance of the drug, but merely reduction in dosage. Occasionally patients complained of pains in the extremities resembling a mild peripheral neuritis. Thiamine chloride was administered for this condition. Patients should be cautioned not to take mineral oil or any other oil-base laxative since the drug is oil soluble, and consequently may not be absorbed adequately. We feel that it is necessary that there be some degree of gynocomastia as an assurance that the endocrine effect is being obtained. Gynocomastia is not an indication for reduction of dosage unless extremely severe.

The dosage of stilbestrol has been 3 mg. daily for a period of two to three months, given in divided doses (1 mg. t.i.d.). The dosage is then reduced to 2 mg. daily for an indefinite period. However, in the presence of intolerance it may be reduced to 1 mg. daily temporarily. In general, should patients not be able to tolerate 2 mg. daily for long periods, orchiectomy is indicated.

The general results from stilbestrol administration are as follows: 90 per cent, temporary improvement; 60 per cent, improvement sustained for six months to one year and then relapse; 20 per cent, improvement for twelve to twenty-four months and then relapse; 10 per cent, sustained improvement from twenty-four to thirty-six months. When orchiectomy was performed following a relapse after stilbestrol therapy, about 15 per cent showed slight improvement, but usually for only a short period of time.

Dr. Kiefer and I began the use of stilbestrol for carcinoma of the prostate in our clinic at the University of Illinois in 1940.

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The relief of pain, gain in weight, and general improvement have been extremely satisfactory in many instances, and where such improvement has been sustained, the patients are working and otherwise leading a normal life as far as their general activity is concerned. Some degree of testicular atrophy can generally be noted and usually there is complete impotence. Favorable results are usually associated with stabilization or recession of the primary growth, even to the extent that the growth is sometimes no longer sufficiently indurated to appear typical of carcinoma of the prostate on rectal palpation. Those patients who had obstructive symptoms with residual urine were submitted to transurethral resection, the method recommended by most urologists for carcinoma of the prostate. As obstructive symptoms recur, resections are repeated.

Incidentally, at the onset of our investigation we tried stilbestrol for benign hyperplasia of the prostate without any clinical or cystoscopic evidence of improvement.

Our conclusions concerning the present status of endocrine treatment are:

1. Treatment is palliative rather than curative.
2. No previous therapy is as favorable as estrogen therapy or orchiectomy.
3. The advantage of orchiectomy over stilbestrol is insignificant and, in general, stilbestrol therapy is advisable after orchiectomy.
4. Symptomatic relief of pain after either therapy for variable periods of time warrants such medication at present.
5. Except for relief of pain, in our experience, metastatic lesions have not been favorably influenced.

RUSSELL D. HERROLD

DISTURBANCE OF URINATION IN WOMEN

Dr. Earl Ewert and I became interested in disturbance of urination in women about eighteen years ago, and established a clinic at the College of Medicine, University of Illinois. Since that time there have been close to 1500 new admissions to this clinic (1944).

There should be a definite routine technic for the examination of women with disturbance of urination. First, there should be external inspection for the presence of caruncle, periurethral ducts, Skene's glands, and the degree of urethrocele or cystocele if present. Since voided specimens are of very little value as a means of obtaining information for urologic evaluation, catheterization should be done to obtain specimens for microscopic or cultural studies or both. The danger of infection through catheterization is insignificant; if patients give a history of so-called instrumental fever, this can usually be avoided by the administration of sulfathiazole or sulfadiazine for twenty-four hours prior to catheterization. The normal caliber of the urethra in women is between 28 to 30 F., so if at the time of catheterization the urine is found to be grossly clear, sounds may be passed to determine at what size there is firmness or gripping. It is preferable to use straight sounds in women, but if these are not available, then the ordinary Van Buren sounds used in men are quite satisfactory.

Cystoscopic examination should be done if indicated. As regards roentgen-ray studies, intravenous pyelograms are preferable to flat plates. In addition to the information that may be obtained from a flat plate, such pyelograms frequently give some indication of the relative function of each kidney as well as important leads for retrograde pyelography if that should be found necessary at a subsequent date.

THE triple syndrome of contracture of the urethra, urethritis, and trigonitis is exceedingly common. Gradual dilatation of the urethra should be done followed by the instillation of silver nitrate in dilution of 1:800 to 1:100. This solution is retained for only a few seconds after which it is permitted to drain and the catheter is removed. In most instances this treatment gives relief, which is, however, not permanent but may vary from a few weeks to several months. The patients are instructed to return for treatment upon the appearance of the first symptoms of a recurrent irritability. The instillation of silver nitrate can best be described as an in-and-out method, since the catheter is left in place for a few seconds and after drainage some of the silver nitrate will medicate the urethra as the catheter is withdrawn. Although it seems that trichomonad infestation of the urethra can produce some irritability just as in vaginitis, they apparently are not pathogenic for the interior wall of the bladder.

Cystocele or urethrocele of moderate degree may respond favorably to the above treatment, but such response is temporary in most cases and plastic repair is usually indicated except in very old patients or poor surgical risks. Other conditions quite commonly seen, such as polypoid growths in the urethra or neck of the bladder, require fulguration through transurethroscopic or transcystoscopic manipulation.

The symptoms of interstitial cystitis (Hunner's ulcer) are almost constant enough to be diagnostic. The presence of a low bladder tolerance, usually 4 to 6 ounces, together with a grossly clear urine is strongly suggestive of this condition. Cultures of the urine are generally sterile, and microscopic studies may show a few blood cells but otherwise are negative. When the capacity of the bladder has been reached there is extreme urgency of urination and pain if not immediately emptied. Although the etiology of this condition is not known, it is more commonly seen in women (approximately 90 per cent) and most often during or after the third decade in life. The common conditions from which it has to be differentiated are tuberculosis and early malignancy of the bladder. Of the many other names for this condition, one of the earlier ones, elusive ulcer, is significant because the condition is difficult to see cystoscopically. Another synonym, solitary ulcer, is misleading because it is more frequently multiple than single.

The silver nitrate treatment appears most efficacious at present, but relief is temporary rather than permanent. While the pain and irritability following silver nitrate treatment is quite severe for twenty-four to forty-eight hours, most patients will return for a like treatment because of the ultimate relief from distress, even though temporary.

Silver nitrate may be administered by one of two alternate methods: (1) by the instillation of the stronger solution (½ to 1 per cent) retained for five minutes, preceded by instillation of a local anesthetic (nupercaine 1:250 is quite satisfactory); and (2) irrigation to capacity with a more dilute solution of silver nitrate (1:1000 to 1:2000 in distilled water) also preceded by a local anesthetic. This method has added value because it distends the bladder and is also less discomforting for the following twenty-four to forty-eight hours.

INFERTILITY IN THE MALE

Infertility in the male is in a rather unsatisfactory status as regards any beneficial measures, but I thought a few points in evaluating these conditions would be quite worth while. Every urologist has had a decided increase since Pearl Harbor in the number of patients requesting examinations for sterility. It is generally

accepted that the male is at fault in approximately 50 per cent of sterile marriages. The semen may be deficient in various ways—commonly, absence of spermatozoa, a low count, decreased period of viability, or a high per cent of abnormal forms.

No spermatozoa in the semen may be due to bilateral obstruction somewhere between the secreting ducts of the testes and the ejaculatory ducts in the posterior urethra. Spermatogenesis may be at fault, such as that following bilateral orchitis associated with mumps. There are many other causes of faulty spermatogenesis of unknown etiology. These cannot always be differentiated from those due to obstruction without a biopsy of the testicular tissue. It is not at all unusual to see specimens which only have an occasional spermatozoa but sufficient to prove that at least one duct is patent.

THERE are certain factors in connection with the laboratory tests of seminal fluid which are worthy of emphasis. Specimens delivered to office or laboratory in condoms are not satisfactory except for spermatozoal count. The normal count is one hundred million or more per cubic centimeter. The normal period of viability is shortest at body temperature, longer at room temperature, and longest in the ice box. Specimens transmitted in cold weather should be warmed to room or body temperature before examination.

The chief practical point in these observations of seminal fluids is that specimens need not be kept warm after collection while being delivered to the office or laboratory for examination. The important thing to remember is that these specimens, when delivered cold, should stand at room or body temperature for an hour or two before examination.

Since no specific cause of infertility is known at present, there is no specific treatment. The various vitamins (E, C, B complex, and more recently D) that have been reported as important in increasing spermatogenesis have been tried singly and in combination without any satisfactory evidence that any one is consistently helpful. However, I believe it is well, at the present time, to give these patients some reliable, balanced vitamin and mineral combination. As regards the endocrine therapy, I have seen fertility follow the administration of either gonadotropic hormones or pregnant mare's serum, but not consistently, so that it is difficult to evaluate them. It has been reported that the male hormone, testosterone, may temporarily depress spermatogenesis. I think that thyroid extract is of value in over-weight patients, particularly if they have a minus basal metabolism.

OFFICE TREATMENT OF GONOCOCCIC INFECTIONS WITH PENICILLIN

The chemotherapeutic advances in the treatment of gonococcic infections since the introduction of sulfanilamide have necessitated frequent revision as more effective derivatives became available.

Our series of penicillin treatment for gonococcic infections is based upon only 40 patients, but intensive tests of cure have been made. A high cure-rate can be obtained through the administration of 100,000 Oxford units of penicillin given over a short period of time. I have followed the method first described by Dr. C. Philip Miller and his co-workers. As an example, 25,000 units were given intramuscularly at 1 P.M., followed by like dosage at 2 P.M., 4 P.M., and 6 P.M. So far no failures have been seen following the above method. However, patients who fail of cure on penicillin in the above dosage may require hospitalization for a sufficient period to enable successful administration of larger dosage over a longer period of time. A trial of the above schedule would seem to be the method of choice, reserving more intensive treatment for those not cured by a smaller amount.

There have been no failures in a small series of patients by the five-hour method of administration of penicillin. In all instances adequate courses of sulfathiazole or sulfadiazine had proved ineffective prior to the use of penicillin. Reports in the literature have listed failures varying from 1 to 10 per cent in series

of 100 or more patients. Most of such failures have been reported as cured when a second course of penicillin was given, usually 200,000 units, distributed over a longer period of time. It is likely that the latter total dosage might be distributed over an office day of eight or nine hours before resorting to hospitalization. This drug is excreted very rapidly so that twelve to fifteen hours after an injection of 25,000 units there is very little, if any, antibacterial substance in the urine. Therefore, after an overnight lapse of treatment, an injection the following morning would be like starting a new course.

Tests of cure in general practice are best made by sending the patient to a competent laboratory rather than by attempting to collect and transmit specimens for culture. It is particularly desirable in women that cultures should be made since smears are not reliable. After penicillin therapy a few days should elapse before the first culture is taken. Two subsequent cultures should be taken, at least one following menstruation.

Frequently the urethral discharge does not disappear immediately, but becomes more mucoid and scanty, day by day. If it persists for longer than one week, the prostate should be checked and if it is infected with other bacteria, suitable treatment should be administered. Likewise, the urine may remain slightly hazy for a few days after gonococci have been eradicated. Occasionally, local treatment is advisable at this time.

NONSPECIFIC INFECTIONS OF THE URINARY TRACT

Our studies on nonspecific infections of the urinary tract cover many years of observing the use of all the sulfonamides and other prior antiseptics, and, more recently, penicillin.

Typical of acute infections that respond to sulfonamide therapy are those due to one or the other of the various coliform bacteria and are more generally seen in women and female children. Dosage on the order of 4 gm. daily in adults should be administered for a period of five days, then reduced to 3 gm. daily for a total period of seven days in order to assure bacteriologic cure. Suitable tests, either by microscopic or culture methods, should be made following a lapse of about one week after the discontinuance of sulfonamide therapy.

The onset of these infections is frequently sudden with symptoms of frequency of urination, dysuria, and hematuria, and with or without elevation of temperature. In general, the symptoms are not unlike those of acute gonococcic infections in women, from which they must be differentiated. Usually they are not complicated by other diseases of the urinary tract, and if cure is prompt, cystoscopy or examination of the upper urinary tract is not indicated.

This type of acute infection with the coliform bacteria is unusual in the male. Here, more often, it is an acute manifestation of a chronic infection following instrumentation or it is associated with various conditions producing residual urine and numerous other causes of chronicity, such as calculus disease, tumors, and abnormalities of the genitourinary tract.

Patients with chronic infections or with acute exacerbations of such infections usually give a history of previous episodes and often reveal symptoms suggesting other associated pathologic conditions of the urinary tract. Invariably, sulfonamide therapy gives only temporary relief of the clinical symptoms and some clearing of the urine. After the drug is discontinued, gross pyuria or bacteriuria returns with recurrence of symptoms. However, these chronic infections may be more or less without symptoms for long periods of time. It is well to administer sulfathiazole or sulfadiazine in moderate dosage for a period of twenty-four hours before and after instrumentation to avoid unnecessary reactions.

It is well known that a high per cent of cures can be obtained in the uncomplicated coliform infections through an adequate intake of either sulfathiazole or sulfadiazine. However, it has been established that this group of bacteria is resistant to penicillin. Staphylococcus aureus responded quite satisfactorily to sulfona-

mide therapy, but staphylococcus albus and many forms of streptococci, notably streptococcus fecalis, are not so sensitive to the various sulfonamides.

As regards the bacteria of the gram-positive group commonly seen in the urinary tract, staphylococcus aureus is, next to the gonococcus, most consistently sensitive to penicillin, as demonstrated both in the test tube and in the body. A severe and chronic infection of the bladder and stump of the ureter caused by staphylococcus aureus was cured with 100,000 units of penicillin administered in a dosage of 25,000 units at three-hour intervals. This cystitis had failed to respond to intermittent courses of the various sulfonamides and other urinary antiseptics administered during the previous eighteen months.

Various strains of staphylococci and other common gram-positive bacteria of the urinary tract appear to vary considerably in their sensitivity to penicillin. A simple method of testing these bacteria against penicillin in the test tube may prove of great value in predicting whether or not infections are likely to be cured by this drug. These tests are made by adding various concentrations of penicillin to a suitable agar medium and inoculating these mediums with pure strains of the various bacteria. Another method more comparable to that met by penicillin action as it penetrates these various infected areas in the body is to inoculate mediums containing penicillin with the infected exudates.

There is the same danger with the use of penicillin in chronic infections as was demonstrated with the sulfonamides, in that it may mask the signs and symptoms indicative of the need of surgical correction for many of the possible associated pathologic conditions of the urinary tract. The value of penicillin for one of the most chronic infections in the male, namely prostatitis, has not as yet been determined. Assuming a maximum office day of nine hours, it has been our experience that any method of administration of a total dosage of 100,000 units will fail in most instances. The preliminary results, however, indicate that the administration of 300,000 to 400,000 units of penicillin* administered during a nine-hour period will cure more of these infections than a five-to-seven-day course of sulfathiazole or sulfadiazine.

A MORE promising future method, however, is prolonging the action of penicillin by either one of two possible methods along the lines of which some investigative work has already been done. One method (Romansky and Rittman) prolongs the action through slower absorption of the drug as administered in a penicillin - beeswax - peanut oil mixture. The other method is that of an excretory blockade set up by the coincidental administration of other substances excreted mainly by the renal tubules, thus blocking and consequently prolonging the excretion period of the penicillin.

One group of investigators (Rammelkamp and Bradley) tested the effects of the simultaneous injection of penicillin and diodrast on clinical patients. In the control group there was 60 per cent excretion of penicillin by the end of one hour, which was reduced to 20 per cent as the result of the simultaneous injection of diodrast. Another group of investigators (Beyer and his associates) made use of para-amino-hippuric acid as the blocking agent, giving it simultaneously with the penicillin. With 78 per cent recovery of the injected penicillin in a given time in the controls, there was but 33 per cent recovery as a result of the para-amino-hippuric acid blockade. Obviously, this or some other nontoxic drug offers possibilities for practical application within the near future.

*It now appears that oral penicillin will have to be administered in a dosage as high as 300,000 units every three hours for a period of two weeks or longer to assure a fair rate of cure in nonspecific prostatitis. (Herrold, Russell D.: Treatment of Chronic Nonspecific Prostatitis with Oral Penicillin. J. Urol. 57:897, May 1947.)

DIAGNOSTIC CLINIC

Trigeminal Neuralgia

ERIC OLDBERG*

UNIVERSITY OF ILLINOIS SCHOOL OF MEDICINE, CHICAGO

I WANT to show a typical case first and then discuss the subject in general.

This man is 54 years old. How long ago did you begin to have trouble?

PATIENT: About ten years ago.

DR. OLDBERG: Where was it when it began, in what part of the face?

PATIENT: In the lower jaw.

DR. OLDBERG: When it was in the lower jaw, what kind of pain was it? Was it a slow pain?

PATIENT: It was above the tooth.

DR. OLDBERG: About that time did it develop into shooting pains, jolting pains?

PATIENT: About a year later it began really to jolt.

DR. OLDBERG: And then as the years went by, what about its spread to other areas?

PATIENT: Well, after several years it began to shoot up into the eye and that was the most prominent of all, when it got to the eye.

DR. OLDBERG: How about into the tongue?

PATIENT: One night into the tongue, and that was bad, too.

DR. OLDBERG: The one feature that I am interested in hearing you talk about is whether this was a continuous pain that was there all the time or whether it was a pain that just shot in there and jolted.

PATIENT: There were times when the pain was continuous and other times when it would flash like that—no warning at all.

DR. OLDBERG: What would bring it on, do you know?

PATIENT: Sometimes stepping out into the breeze or starting to talk in the morning, drinking water, or shaving, or any movement of the face; any little thing would bring it on.

DR. OLDBERG: What did you do about it all these years? You waited twelve years before you were operated on.

PATIENT: Just grin and bear it.

DR. OLDBERG: Did you have any teeth pulled or sinuses worked with or anything like that?

PATIENT: I had teeth pulled soon after the thing started.

DR. OLDBERG: Why? Because that might be it?

PATIENT: I thought it might be.

DR. OLDBERG: And so did the dentist?

PATIENT: Yes.

DR. OLDBERG: But it didn't help?

PATIENT: It didn't help at all.

DR. OLDBERG: Did you have anything else done?

PATIENT: No.

DR. OLDBERG: I think that is about all we want

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to ask you. You were operated upon sixteen days ago?

PATIENT: That is right.

DR. OLDBERG: And you went back to work?

PATIENT: Last Friday.

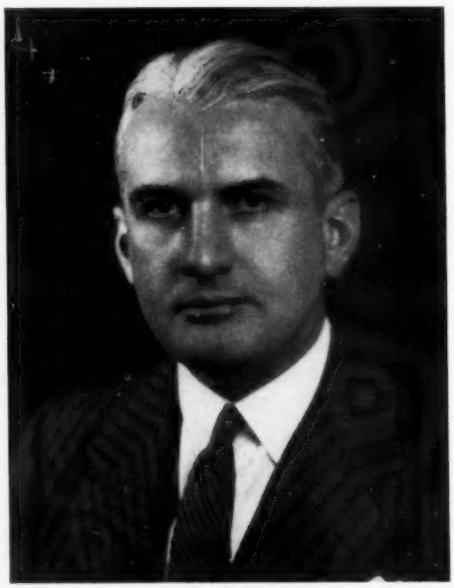
DR. OLDBERG: Inside and outside, on a surveyor's chain and working on books Friday. That is ten days after the operation.

PATIENT: That is right.

This man, of course, suffers from trigeminal neuralgia. This symptom-complex is one of the most characteristic, and therefore usually one of the most easily diagnosed, of all disease syndromes. Because of its not infrequent confusion with other quasi-similar conditions, and because of the utter inadequacy and downright incorrectness of treatment that may be engendered by a mistaken diagnosis, an occasional clinic on the subject for the general profession, is in order.

The first writings on this subject were those of Fothergill, in England in 1773, whose description was so graphic that for many years the condition was called Fothergill's disease. When later anatomic knowledge fixed the responsibility on the fifth cranial nerve, it came to be called trigeminal neuralgia. Other synonyms are "trifacial neuralgia" and "tic douloureux."

The etiology and pathology of trigeminal neuralgia are not definitely known, but since it is a disease of middle and latter life, and since a fair proportion of patients seen with it are hypertensive, the condition of the vascular tree may have some influence. Some observers have declared that in a large proportion of cases the etiology is due to tumors or to impingement of a pulsating sclerotic vessel against the sensory root of the nerve, but upon this matter there is no general agreement. It is certain that serial sections of the gasserian ganglion and its ramifications show no variation between the normal and the "tic" sufferer. And the latter is as likely to live to a ripe old age as any other man.



ERIC OLDBERG

BEFORE considering the disease and its symptoms and cure, a knowledge of the fundamental anatomy of the nerve is essential. Although it is large and has many branches, the trigeminal nerve is actually the simplest of the twelve cranial nerves. The others are all specialized, and may be purely motor or sensory, or may be designed to receive special stimuli like light or sound or taste, or may carry parasympathetic fibers, etc. The fifth nerve, however, is the simple cranial counterpart of an ordinary spinal nerve.

The spinal nerves make up the innervation to the trunk and extremities, and combinations of them are the components of all peripheral nerves, such as the radial, median, ulnar, sciatic, intercostals, and so on. These nerves are mixed, and are made up of motor and sensory fibers. The motor fibers take origin in the anterior horn cells of the gray matter of the spinal cord, whose axons leave each segment of the cord in a bundle, called the motor or anterior root. The sensory fibers take origin outside the central nervous system—but are contiguous to it—in the posterior root ganglion

for each segment. The cells in the ganglion have single processes which split like a T, one branch of which joins the ganglion to the posterior portion of the spinal cord, while the other branch runs peripherally, to join the anterior or motor root axons, thereby forming an ordinary mixed, or sensorimotor nerve.

In just this same way, the trigeminal nerve is the ordinary mixed nerve to the head and face. The motor portion, or root, takes origin in the gray matter of the pons in cells similar to those in the cord, and runs peripherally to innervate the muscles of mastication—the masseter, the temporal, and the pterygoids. The sensory portion arises on the floor of the cranial cavity in the middle fossa at the base of the brain, in the gasserian ganglion, sometimes called semilunar or trifacial or trigeminal ganglion. The gasserian ganglion cells are exactly like those of the spinal root ganglions, in that they have T-shaped processes which divide, one branch going peripherally, and the other joining the ganglion to the pons.

It is only here that a little anatomic elaboration is necessary. The sensory portion of the fifth nerve has a tremendous territory to serve; this accounts for its large size. Being the only cranial nerve in common service, it must cover the entire area from the vertex of the scalp to the under surface of the chin. Even the dural vessels are innervated by this nerve, as well as the sinuses, the conjunctiva, the mucous membrane of the nose and mouth, the teeth and gums of both jaws, and the anterior two-thirds of the tongue. Therefore, to economize in size, the peripheral sensory branch, coming from the ganglion, leaves the skull in three bundles rather than one, to reach the soft tissues in which its terminations lie.

These three bundles, or divisions, roughly divide the head and face into three parts. The first, or ophthalmic division, leaves the skull through the superior orbital fissure, together with the third, fourth, and sixth nerves, to supply sensation to the scalp, forehead, and eye. A familiar branch of this division is the supra-orbital nerve. The second, or maxillary, division makes its exit through the foramen rotundum and supplies the maxillary portion of the face, including the nose, inside and out, upper jaw, and roof of the mouth. A familiar branch of this is the infra-orbital nerve. The third, or mandibular division, leaves the cranial cavity by way of the foramen ovale, en route to the chin, lower jaw, floor of the mouth, and anterior two-thirds of the tongue. A familiar branch of it is the mental nerve. Since the third division innervates the lower, or movable and chewing jaw, it is natural that it should be the division joined by the motor root previously mentioned, which innervates the muscles which move this jaw. Therefore, the ophthalmic and maxillary divisions are purely sensory, whereas the mandibular division is mixed, being both motor and sensory.

THIS anatomic preamble was necessary because a knowledge of it is essential to a proper conception of the disease and its treatment. A consideration of the symptoms is next in order, preceded by a few details. Trigeminal neuralgia, as previously stated, is a disease of latter life. It is almost unheard of before twenty, very rare before thirty, uncommon before forty, fairly common before fifty, and it reaches the peak of incidence in the ensuing decade. Every neurologic surgeon of experience has seen and has probably operated upon patients in the eighties and even over ninety. It is one and a half times as prevalent in women as in men and occurs on the right side of the face in the same ratio. It may be bilateral on rather rare occasions—although Harris in England reported as high as 4 per cent—but the involvement of the second side usually succeeds the original affliction after an interval of years. The most frequent site of origin, in my experience, is about evenly divided between the distribution of the third division and the infra-orbital branch of the second. The rarest site of origin is the distribution of the first division and its supra-orbital branch (less than 5 per cent). As the disease progresses and the years go by, the area involved may spread to contiguous

divisions. The pain does not extend across the midline of the face.

To make a diagnosis of this condition, the presence of one feature is imperative and absolutely essential. That is the paroxysmal nature of the attacks. Without it, one cannot make a diagnosis, and with it, the symptom proves virtually pathognomonic. Attacks of trigeminal neuralgia strike just like lightning. At times they may occur spontaneously, and at other times patients may observe that they are brought on by touching certain areas (trigger zones), by chewing, talking, drinking cold water, being exposed to cold drafts, etc.

The characteristic patient enters the office slowly and with caution, holds his face immobile while he talks, is unwashed and unshaven on the affected side, shrinks when anyone approaches his face, and, sad-to-say, is frequently toothless because some unsophisticated dental colleague has made an unavailing effort to relieve him. If the patient is old or presenile, or is sick of describing the details of his trouble, it may be difficult to extract a good description from him; but the examiner must persevere, for the attacks *must be paroxysmal*. Their duration may be momentary, or up to a minute or two, but the diagnosis cannot be made without a history showing that each time they strike, they do so with instantaneous ferocity, then disappear, and strike again. Continuous aching pains, which come on gradually, reach a height over minutes or hours, and then slowly subside, are not indicative of trigeminal neuralgia, and to treat them as such leads only to trouble.

Trigeminal neuralgia usually runs a remitting course in the early years. The patient may have a few attacks over several days or weeks, and then a remission of a year or more. It is this which makes him reluctant to see the surgeon, and persuades him to try nasal, dental, and sinus subterfuges for a time—for he hopes that with his next remission will come permanent peace. This is never realized, however, for recurrence is as sure as is survival. With each recurrence, the attacks are usually more frequent and severe, the territory involved greater, and the bouts longer. Finally, after three to five years or more the patient gives up and comes for treatment.

Medical treatment of trigeminal neuralgia is not successful. This has its happy aspects, for the pain is so severe that reasonable use of narcotics will not touch it, and therefore one never sees an addict. Tinkering with the sinuses or teeth is of no avail, though it is often done. Vitamin B_1 and ferrous carbonate have been tried, but have met with indifferent success. One can sometimes give moderate relief from individual attacks with the inhalant tricholorethylene, a first cousin to chloroform.

The only thing which completely cures, temporarily or permanently, is to attack the nerve. There are three methods of doing this—by injecting alcohol into its branches, by cutting its sensory root, or by dividing its pathway in the brain stem.

Alcohol injection gives not only temporary relief but also complete relief if the responsible branch or division of the nerve can be successfully attacked. The most common places for injection are the supra-orbital branch of the first division at the supra-orbital foramen, the infra-orbital branch of the second division at the infra-orbital foramen, the second division itself at the foramen rotundum, or the third division at the foramen ovale. The latter injection also causes a temporary motor paralysis, since the motor fibers going to the muscles of mastication are mixed with the third division at this point. The first division cannot be injected in its entirety at the superior orbital fissure, since alcohol in this location produces an ophthalmoplegia by affecting the third, fourth, and sixth nerves, which exist through the same opening.

Alcohol injections must be done at a point where the division or branch is fixed, since, in order to be effective, the point of the needle must pierce the nerve sheath so that alcohol may mix directly with the fibers and kill them by precipitation of their protein. Alcohol will not infiltrate tissue as do watery solutions. Skillful alcohol injection entirely replaces

peripheral neurectomies, such as were performed some years ago. Neither procedure, however, is permanent since the eventual and inevitable regeneration of fibers down to their terminations is accompanied by a recurrence of the disease. Nevertheless, alcohol injection remains a useful and frequently practiced procedure for many patients—especially those who have had long remissions and still hope that another and final one will occur, and, therefore, are not psychologically prepared for the permanent abolition of all facial common sensation by operation. Alcohol injection may be repeated once or twice, but its efficacy then wears out, because of compartmentation of the nerve with scar tissue, and resultant inaccessibility of some fibers. The usual period of relief from a successful alcohol injection is one to two years.

Operations therefore are the only permanent cure. The standard operation performed almost everywhere by neurologic surgeons involves an approach to the gasserian ganglion through very much the same route one uses in doing a decompression. An incision is made in front of the ear so that the hair will conceal it, and a small opening is made in the temporal bone. The dura is then peeled up from the floor of the middle fossa and the middle meningeal artery divided. The ganglion is then exposed and the posterior root which joins it to the pons is divided. Refinements which have been added to this procedure have been (1) the sparing of the motor root, which lies separately from the sensory root, and (2) only partial section of the sensory root in patients with second or third division tics, in order to preserve sensation to the eye and thereby protect it. This latter refinement is called a differential section. However, it allows for about a 10 per cent chance of recurrence carried by the intact fibers, for which complete section may eventually be necessary. When the sensory root is divided between the ganglion and the pons, there can be no question of regeneration, since the essential neurilemma sheath is lacking from the fibers here.

An operating technic has also been devised for special cases. In this operation the tract for pain serving this nerve is sectioned in its course through the medulla. This operation is particularly useful in facial malignancies, for the upper cervical nerves, which run into the parotid area, may be sectioned at the same time. Finally, I should add that some surgeons prefer to approach the sensory root from behind in the posterior fossa rather than the usual approach from the side through the middle fossa. All these procedures carry a mortality rate which should be negligible, and I frequently tell my patients that the operation is harder on the surgeon than it is on the patient.

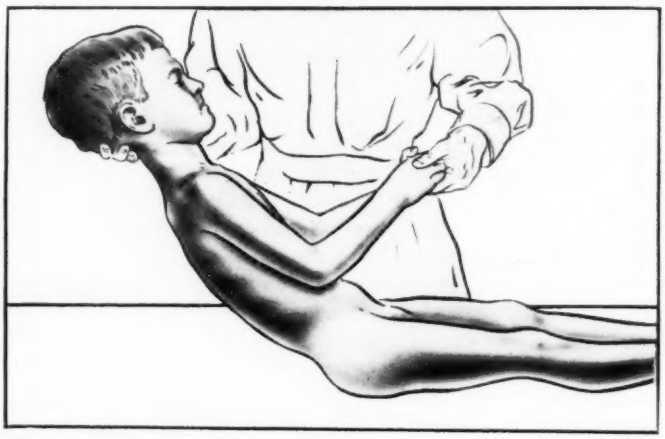
Total hospitalization is usually a week or less, and the total disability for return to work, including the time spent in the hospital, is usually less than a month.

In conclusion, it may be stated that the important thing in trigeminal neuralgia, a not uncommon disease, is to diagnose it properly. Once this is done, the treatment, though specialized, is stereotyped. Early and proper diagnosis, however, may save the patient much time, much agony, much money, many futile medical and dental procedures, and possibly his respect for the medical profession.

SOME DIAGNOSTIC AIDS IN ACUTE ANTERIOR POLIOMYELITIS

A presentation of the National Foundation for Infantile Paralysis in the Scientific Exhibits Section of the Centennial Convention of the American Medical Association, Atlantic City, June 1947.

BACK RIGIDITY IN POLIOMYELITIS



Poliomyelitis.

The patient is aided in his attempt to sit up by supporting the occiput and arms. The head and back move as one nearly inflexible structure. The neck and back may be "rubbery" rather than completely inflexible. Note the expression of distress.

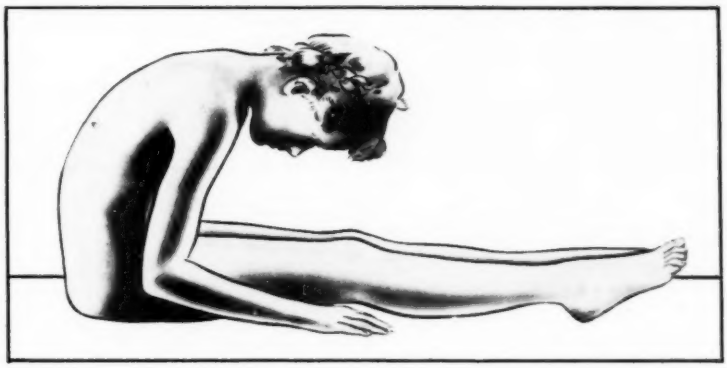
Poliomyelitis.

A continuation of the procedure shown in figure above. As soon as patient is upright, the knees become somewhat flexed. The patient's hands reach for the knees either because of pain or to help support himself in an upright position. The chin cannot be brought to the chest nor the head to the level of the knees.

FLEXIBILITY OF BACK IN THE NORMAL CHILD

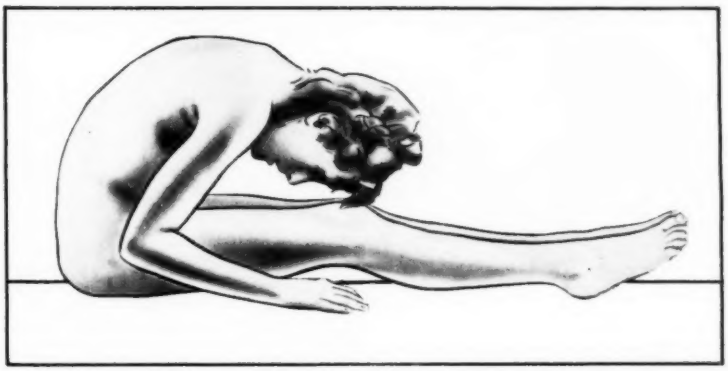
Normal.

An average comfortable position with curving of back and neck. The knees are slightly flexed.



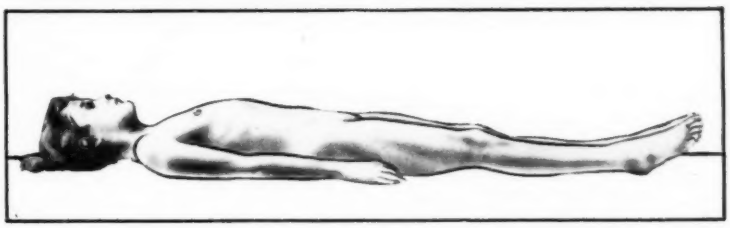
Normal.

More extreme flexibility with the forehead touching the knees. Knees are slightly flexed.



Normal.

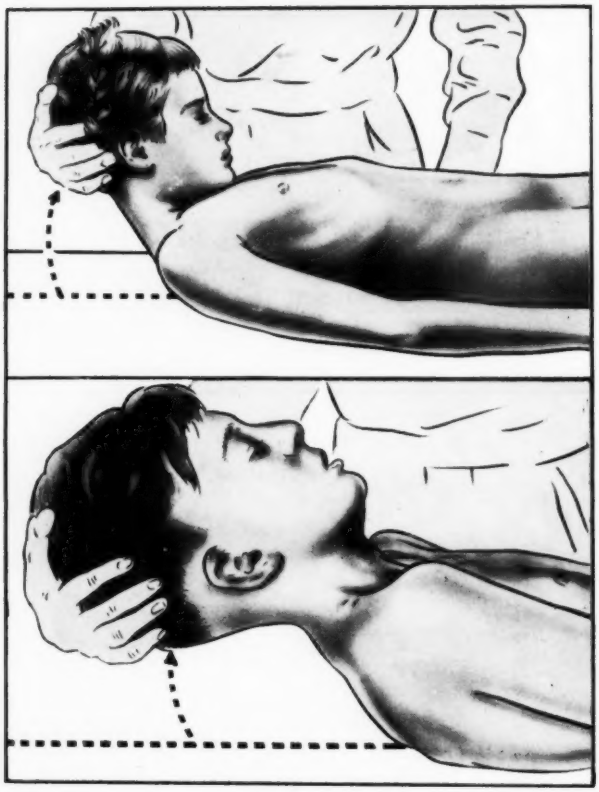
Supine and relaxed.



Normal.

Supine and relaxed.

NECK RIGIDITY IN POLIOMYELITIS



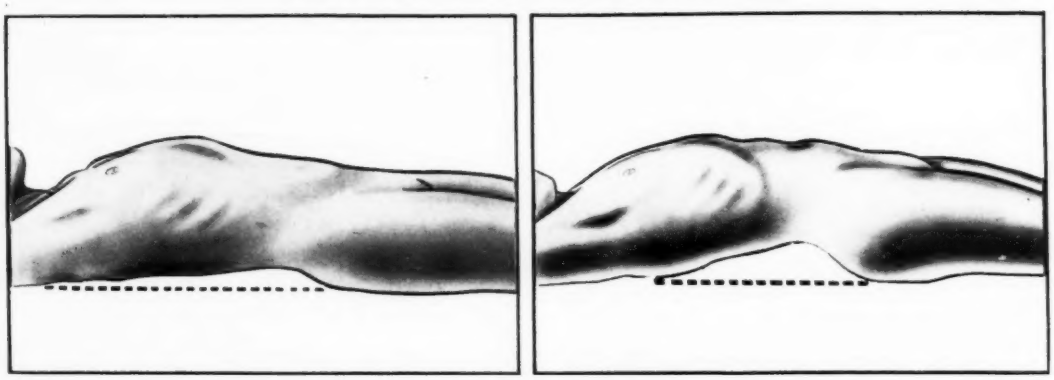
Normal.

The chin touches the chest either voluntarily or with support.

Poliomyelitis.

The head is held rigidly upon the shoulders, with slight posterior retraction. When the head is lifted by flexion, the head, neck and shoulders move as one unit. The accessory flexors, such as the platysma, are used. Pectoral rigidity below the clavicles, causing "cupping" of the shoulders, is frequently observable in the child.

BACK RIGIDITY IN POLIOMYELITIS



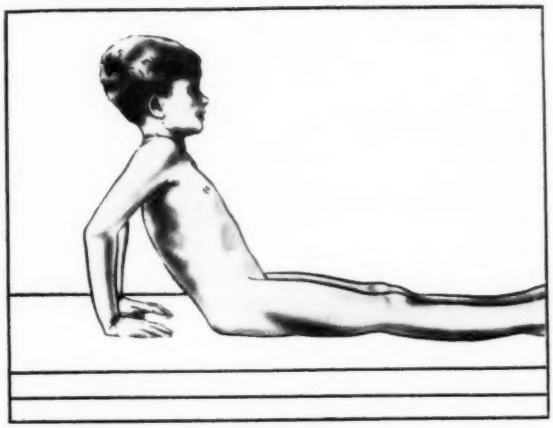
Normal.

The child lies supine, with hips and upper back touching the table, with the arms raised above the head.

Poliomyelitis.

The lumbar lordosis is sufficiently marked so that the hand and arm of the examiner may be passed under the patient through the arch formed by the muscles of the back.

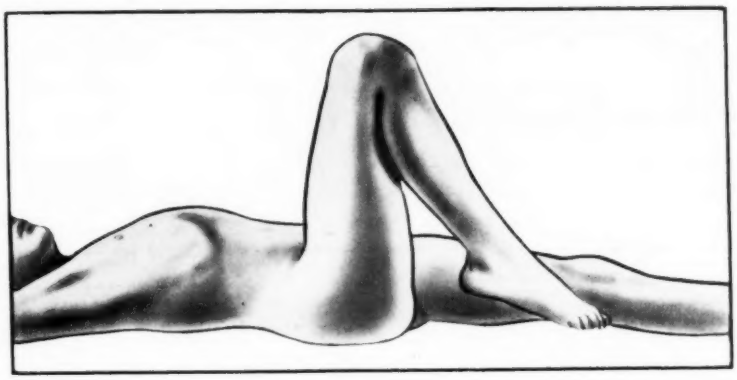
THE "TRIPOD" SIGN



Poliomyelitis.

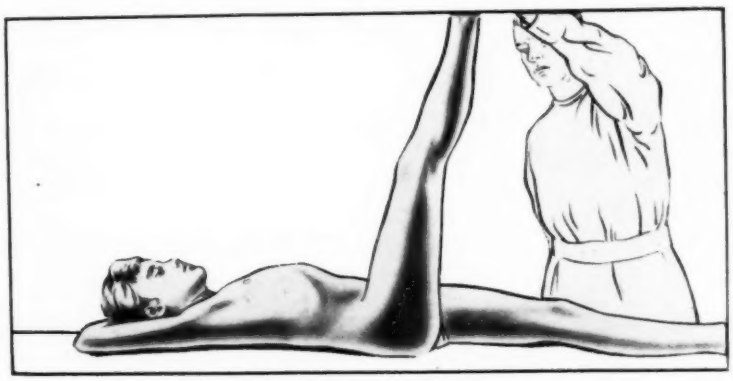
When the patient attempts to sit up, without aid from the examiner, he is forced to use his arms for support in the position of a tripod. Almost all flexion takes place at the hips, sometimes unequal in degree on the two sides. The patient, as illustrated, shows some distress but less than when a similar maneuver is carried out by the examiner. Contrast with the normal action shown on page 117.

FLEXION OF THE HIP AND EXTENSION OF THE KNEE IN THE NORMAL CHILD



Normal.

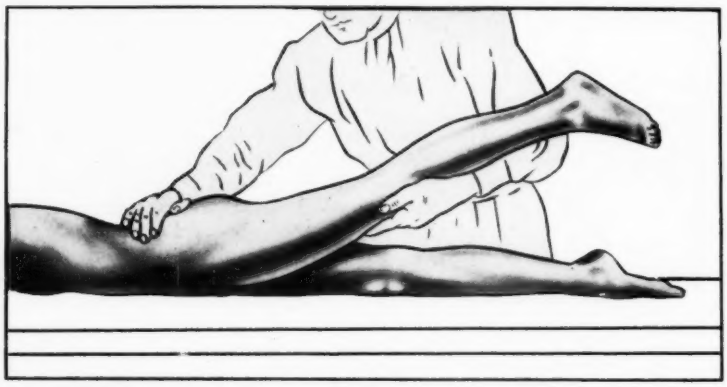
The hip is partially flexed with the knee completely flexed as a voluntary movement.



Normal.

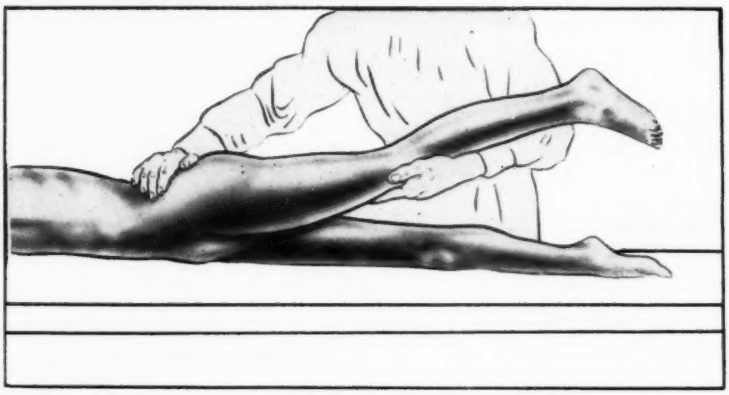
Full extension of the knee is accomplished in this position with the aid of the examiner.

RIGIDITY OF HIP FLEXOR IN POLIOMYELITIS



Normal.

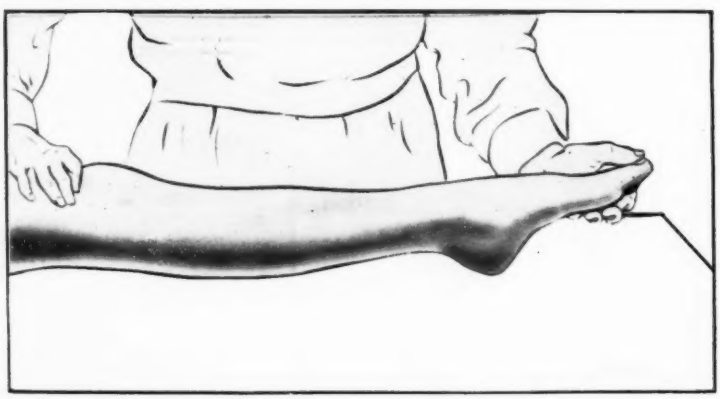
The extremity is extended at the hip with the patient prone.



Poliomyelitis.

Extension is restricted and the pelvis is raised and rotated towards the examiner.

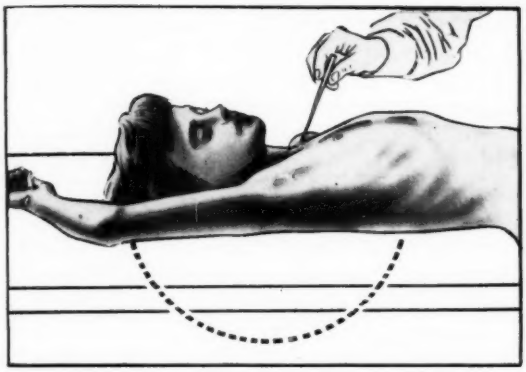
RIGIDITY OF ANTERIOR TIBIAL IN POLIOMYELITIS



Normal.

The foot is fully plantar extended by the examiner.

SHOULDER RIGIDITY IN POLIOMYELITIS



Normal.

Full abduction of the arm, without restriction by the pectoral muscles.

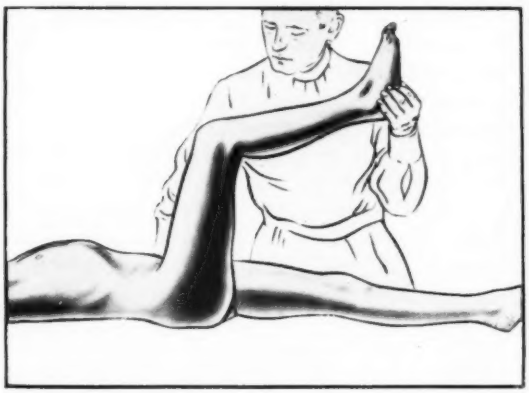
Poliomyelitis.

Rigidity of the pectoral muscle holds shoulder in partial flexion and prevents full abduction and elevation.

FACIAL EXPRESSION IN POLIOMYELITIS

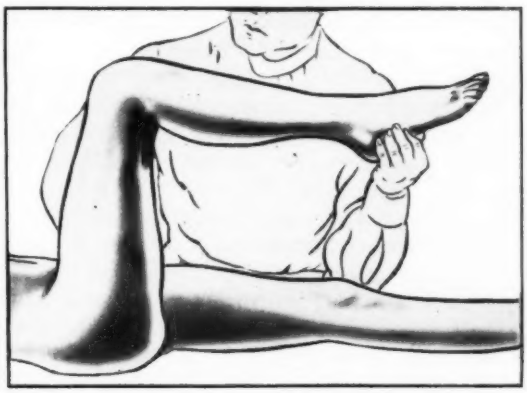
Patients often show anxiety, tenseness and distress in facial expression. The mouth may be open if breathing is restricted, and the face is mask-like but anxious. The sterno-mastoid muscle may be very prominent.

THE KERNIG SIGN IN POLIOMYELITIS



Poliomyelitis.

Shortening and rigidity of the flexors of the knee in Kernig position.



Poliomyelitis.

More extreme shortening of the flexors not usually seen to this degree in poliomyelitis and more suggestive of meningitis.

EDITORIALS

PRESENT STATUS OF FOLIC ACID THERAPY

The finding of a single synthetic chemical compound of known molecular structure which is effective in treating persons with pernicious anemia, nutritional macrocytic anemia, and tropical sprue, is a medical event of great importance. This substance, pteroylglutamic acid, commonly called folic acid, is the newest member of the vitamin B-complex.

The name "folic acid" originally was given to a substance obtained in nearly pure form from spinach by Mitchell, Snell and Williams. This substance supports growth for two organisms, frequently used in microbiologic investigations: Lactobacillus casei and Streptococcus lactis R (now termed Streptococcus faecalis). It was isolated independently from liver by Stokstad and by Pfiffner and his associates and an identical substance was synthesized by Angier and his co-workers.

Folic acid occurs in nature in a free form and also as a part of various complexes. The following five substances have been isolated in crystalline form: (1) vitamin Bc, (2) Lactobacillus casei factor from liver, (3) L. casei factor from yeast, (4) another L. casei factor isolated from a fermentation residue, and (5) vitamin Bc conjugate. Vitamin Bc, the L. casei factor from liver, and the L. casei factor from yeast are identical with the synthetic product described by Angier and his associates. This compound, folic acid or pteroylglutamic acid, contains one molecule of glutamic acid. In contrast, the special L. casei factor isolated from the fermentation residue yields three molecules of glutamic acid. The vitamin Bc conjugate isolated by Pfiffner and his co-workers yields seven molecules of glutamic acid.

While folic acid has been accepted as a potent hemopoietic agent, clinical studies with the fermentation factor and vitamin Bc conjugate have not been extensive. Published reports on these substances, however, indicate that they too are somewhat effective in producing a hematologic response in certain types of macrocytic anemia in relapse.

The gradual increase in our knowledge of hemopoiesis and the development of effective anti-anemic therapy are intensely interesting subjects. In the mythology of many races, the idea of taking liver internally goes back to antiquity. The era of its modern usefulness in man was initiated in 1926 by Minot and Murphy when they showed that the oral administration of large doses of whole liver effected a remission of Addisonian pernicious anemia in relapse. Soon, liver was tested in various cases of macrocytic anemia and was found to be an effective hematopoietic substance in the treatment of the macrocytic anemia of pregnancy, tropical sprue, non-tropical sprue, nutritional macrocytic anemia, and pernicious anemia.

It soon became apparent that a potent extract from liver would be less difficult to administer than whole liver, and a number of crude liver extracts were prepared. Within two years Cohn had developed his fraction G which became widely used in treating macrocytic anemias due to the absence or deficiency of the erythrocyte maturation factor. Eventually, more concen-

trated liver extracts were prepared and became the standard of those students who were assaying new substances and new liver fractions.

The concept arose that liver might contain many substances which might be hematologically active, a concept that was strengthened by the observation that some substance or substances were destroyed or discarded in the concentration of crude liver extract as determined by the hematopoietic response effected by both crude and concentrated liver extract.

Realizing that liver extract was a mixture of many chemical substances, investigators knew that they were facing a long and tedious task in attempting to isolate the active principle or principles. Many fractions of liver extract, many nutrients, concentrates, and synthetic substances were tested for their hematopoietic properties. Some of them had slight activity, but most of them had none. Folic acid was known to be present in infinitesimal amounts in a number of potent liver extracts but, working on the hypothesis that a number of chemical molecules could effect hemopoiesis and that folic acid might well be one of them, investigators tested it in macrocytic anemia in relapse, and its efficacy was quickly demonstrated.

Thus, for the first time, it was possible to administer a pure synthetic compound to persons with the macrocytic anemia of pernicious anemia, of nutritional deficiency of pregnancy, and of tropical or non-tropical sprue, so as to effect a hematologic remission. This discovery has at long last placed investigations in the field of the macrocytic anemias in the realm of pure compound therapy, and is a step toward learning more of the etiology and pathogenesis of these anemias.

A review of the biological and clinical aspects of studies with folic acid has been published by Berry and Spies and by Spies. Soon after folic acid therapy is initiated, the numbers of megaloblasts and early erythroblasts in the bone marrow decrease progressively and the late erythroblasts and normoblasts increase. Eventually, the normal ratio of nucleated red blood cells and white blood cells of the marrow is reestablished. As early as the second day of treatment, reticulocytosis can be detected in the bone marrow, and frequently it can be detected in the peripheral blood from the third to the fifth day of therapy. A peak usually is reached on the sixth to the tenth day, the height of the rise varying from case to case, depending upon the severity of the anemia, the

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adequacy of the dose, and the presence or absence of complications. This is followed by a gradual increase in the number of red blood cells and in the hemoglobin. When thrombocytopenia or leukopenia is present, as is frequently the case, increases toward normal usually occur.

The clinical improvement which parallels the hematologic response is equally dramatic. When the reticulocytes begin to rise, the patients experience a remarkable improvement in the feeling of well-being. There is a sudden and tremendous increase in their appetites which is accompanied by a return of strength and vigor and usually by a gain in weight. The chief limitation of folic acid is that it will neither prevent the development of acute or subacute combined degeneration which frequently occurs in Addisonian pernicious anemia, nor will it relieve it once it has developed. Liver extract, along with folic acid, should be given in a dosage sufficient to relieve signs of acute or subacute degeneration. In patients who are allergic to liver extract, folic acid is a valuable substitute unless the patient has neural degeneration. In such cases folic acid therapy should be supplemented with the necessary amount of liver extract.

As yet, no satisfactory explanation has been given for the fact that relatively large amounts of folic acid are required to produce a satisfactory hemopoietic response. Despite the many intensive clinical studies which have been made on folic acid as a therapeutic agent, the final word on dosage cannot be stated definitely. In most cases, from 10 to 20 mg. daily, in divided doses given either orally or by injection, is sufficient to induce a remission in persons with nutritional macrocytic anemia, the macrocytic anemia of tropical or non-tropical sprue, or Addisonian pernicious anemia in relapse. No unpleasant side effects have been observed.

Because of the world-wide distribution of macrocytic anemias, physicians everywhere have contemplated the best method for their detection and therapy. The active principle in liver extract probably is not folic acid but a very powerful substance which when obtained in pure form probably will be more efficacious per unit weight than is folic acid.

The final place of folic acid in the treatment of pernicious anemia, nutritional macrocytic anemia and sprue has not been determined. Nevertheless, the use of folic acid is opening a fresh and fertile field, and the macrocytic anemias will have to be redefined in the light of the new evidence in regard to their pathogenesis.

TOM D. SPIES, M.D.

VITREOUS TRANSPLANTATION

MUCH has been in the news of late regard- the Eye Bank for Sight Restoration, a worthy organization designed to promote the restoration of sight among persons suffering from corneal defects. Officials of the Eye Bank have calculated that corneal transplantations will benefit from ten thousand to twenty-five thousand blind persons in this country alone.

Less well known are the pioneer endeavors to transplant the human vitreous. Generally, opthalmologists leave the vitreous alone. Hence, although some experimental work was done as long ago as 1890, not until last year did a paper appear in which human vitreous transplantation was reported. Recently, Cutler, the originator of the technic, has released his second report in which he discusses the results of his first 13 cases of vitreous transplantation.

The technic involves the withdrawal of 1.5 cc. of vitreous from the eye of the patient, with an 18-gauge needle on a 5 cc. syringe. The syringe is then detached, and another is attached to the needle. This syringe contains 2 cc. of clear vitreous from a recently enucleated eye; it is injected until the patient's eye has reformed.

Eight of Cutler's patients had vitreous transplantation for vitreous hemorrhage. Four of the operations were successful. Improvement in vision ranged from light perception to 20/50, and from 20/300 to 20/25. A fifth operation was partially successful, and the remaining three were failures, probably due to retinal de-

tachments. Five other patients were operated, all because of detachment of the retina. Only one of these is considered to have been benefited. All of these patients were considered difficult, however, and they had all had retinal detachment operations previously.

Obviously, the technic will be revised many times in coming years. There can be little doubt, however, that Cutler has made a real contribution in demonstrating conclusively that clear vitreous can be used to transplant abnormal vitreous.

THE RICKETTSIAL DISEASES

Diseases caused by rickettsia have received increased recognition in recent years. Typhus, of both the epidemic and murine varieties, is by no means a closed problem. Rocky Mountain spotted fever is no longer confined to the area which gave it its name but has been found east of the Alleghenies. Tsutsugamushi disease, or scrub typhus, boutonneuse fever, Kenya typhus and South African tick bite fever do not as yet appear to have become problems in this country. A new skin disease, so far mild in character and restricted in distribution, has been traced to mice and their parasites. This has been called Rickettsialpox (Huebner, Robert J., et al., Public Health Reports, May 30, 1947).

There are four types of vectors for the rickettsial diseases. The world-wide distribution of these vectors clearly indicates that the rickettsial diseases can become an even more serious problem than they have been to date.

According to Kohls (Vectors of Rickettsial Diseases, Ann. Int. Med. 26:713, May 1947), the four groups of parasites which will transmit rickettsial diseases to man are ticks, mites, lice and fleas. Ticks are responsible for transmission of the spotted fever and boutonneuse fever types and are probably involved in the disease known as Q fever which appears to be indigenous to Australia and has not been found to occur naturally in this country as yet. Mites have so far been shown to be vectors of only one of the rickettsial diseases, namely, tsutsugamushi disease. The European, or epidemic type of typhus, is transmitted by lice and the murine, or endemic typhus, by fleas.

In view of the known distribution of the rickettsial diseases today and the difficulty in eradicating the numerous potential vectors, it seems likely that diseases of this type will become more serious before becoming less so. It is peculiarly fortunate, therefore, that what appears to be an excellent treatment for at least some of the rickettsial diseases in the form of P.A.B.A. (para-aminobenzoic acid) is now available. Even with this treatment, however, every effort must be made to prevent the spread of those which are indigenous and to impede the entry of those which have not yet been discovered in the United States.

PEPTIC ULCER

Reports are continuing to appear regarding the use of protein hydrolysates in the treatment of peptic ulcer. A late issue of *Gastroenterology* carried two papers which are worthy of comment. Hodges treated for two to three weeks 26 patients suffering with chronic peptic ulcer. He used a protein hydrolysate-carbohydrate mixture. While the treatment produced better results than those obtained with a conventional dietary regime, the frequency of relapses was not diminished. Three patients failed to respond. In general, the patients gained weight, and gastric acidity was reduced.

Kimble reported results with a series of 15 patients, of which 13 had duodenal ulcer, 1 a combined duodenal and gastric ulcer, and 1 a gastric ulcer alone. The patients were treated for an average of nine days, during which 1,500 cc. of a 6 per cent solution of protein hydrolysate were administered daily by gastric drip or venoclysis. Following treatment, x-ray evidence revealed that the ulcers had disappeared in 9 of the patients. Another 5 showed marked improvement; one patient did not respond. Serum proteins were elevated, and most of the patients gained weight.

This Month in Medicine

POLIOMYELITIS

Since the poliomyelitis season is at hand, Sabin has presented some guiding principles designed to restrain the spread of poliomyelitis virus.

Most often, the virus appears to be spread through contamination with feces, since it lives for some time in the intestinal contents and stools of both the apparently healthy as well as acutely paralyzed persons. From these sources, contamination of hands and fomites allows the virus to be disseminated; or "filth" flies may deposit it in infective amounts on food. Sabin does not believe that available evidence supports the view that droplets from the respiratory tract play a significant role in the spread of the poliomyelitis virus.

With these epidemiologic facts in mind, Sabin offers a few pointers that are well worth remembering. Closing of movies and churches is unwarranted, but playgrounds and swimming pools should be closed during an epidemic. If schools can observe rigid health discipline, they may remain open, since apparently the virus is not spread by the mere presence of large numbers, but rather by playing, shaking hands, and using a common toilet without adequate hand-washing facilities.

All home measures that prevent contamination of food by flies are good. However, mass destruction of flies by DDT—spraying a whole city from an airplane, while dramatic and newsworthy, is of little epidemiologic value. Flies should not be allowed to breed on sewage sludge beds, nor should they have access to raw sewage.

Stools from patients with poliomyelitis may be disposed of directly into the sewage system, without sterilization; for the sewage is already contaminated by virus in the feces of persons who are not known to be infected. On general hospital wards patients should be treated with the "typhoid technic" for four weeks following the appearance of symptoms. Laundry of patients is contaminated; laundry workers, therefore, should be advised regarding the use of gloves and washing of hands.

Patients should be isolated, in the home, for from two to four weeks following the onset of symptoms. Members of the patient's family, if public food handlers, should not return to work for at least two weeks, nor should they come in contact with children.

Sabin points out that while these measures will not stop an epidemic, they should reduce the number of persons that will become infected.

SUGGESTED READING

Sabin, A. B.: The Epidemiology of poliomyelitis, J. A. M. A. 134:749, June 28, 1947.

SERODIAGNOSIS OF CANCER

Stadie and his associates have been unable to confirm the recent results of Duboff and Hirshfeld who, using a tyrosinase color test, reported that the serum of 89 per cent of 140 cases of proven active malignant neoplastic disease showed an inhibition of color development equal to or greater than 15 per cent when compared to controls without serum. Only 3 in 117 normal subjects, and only 9 of 68 patients with clinical conditions other than cancer gave color inhibition greater than 15 per cent.

On the basis of these findings, Duboff and Hirshfeld developed an interesting serodiagnostic test for cancer. If it could be confirmed, it would be quite important. Regrettably, Stadie and his associates, using what appears to be the same technic, could not distinguish the sera of 37 cancerous and 42 non-cancerous subjects.

SUGGESTED READING

Stadie, W. C.: The tyrosinase inhibiting action of serum from normal and cancerous patients. Am. J. M. Sc. 213:655, June 1947.

ASTHMA AND INTRAVENOUS ETHYL ALCOHOL

Asthmatic patients who have been wheezing for hours on end become "hungry, thirsty, tense, and tired." To give them surcease from these various physical woes, as well as to treat their asthma, several types of medication are necessary, the actions of which are not always consistent. Obviously, a single, intravenous drug would be desirable. But such a drug, to be ideal, should be non-toxic, non-allergenic, and evenly and rapidly metabolized. It should have a wide margin of safety between the pharmacologic and toxic doses. It should be a sedative, a vasodilator, and a respiratory stimulant.

Brown, in the May-June issue of the *Annals of Allergy,* suggests that ethyl alcohol, administered intravenously, fulfills these criteria. On the basis of the experience of Behan in this country, and Verkhovskaya in Russia, both of whom used intravenous ethyl alcohol as an analgesic and anesthetic, Brown administered this drug to patients with severe bronchial asthma. A 5 per cent ethyl alcohol solution in physiologic 5 per cent glucose-saline solution, with or without epinephrine 1:1,000, was given intravenously at the rate of 80-100 drops per minute. This effectively relieved severe bronchial asthma in 5 of 6 patients who had not responded to the usual medications.

The treatment was used on 26 additional patients, with similar results. There were no complications or side effects. Brown mentions that Dr. J. D. Gillaspie of Boulder, Colorado, independently discovered the same treatment, and successfully used it on 5 patients with severe bronchial asthma.

SUGGESTED READING

Behan, R. J.: Ethyl alcohol intravenously as postoperative sedation. Am. J. Surg. 69:227, August 1945.

Verkhovskaya, E. V.: Intravenous alcohol anesthesia. Am. Rev. Soviet Med. 2:260, February 1945.

Editorial: Intravenous alcohol anesthesia as used in Russia. J. A. M. A. 128:133, May 12, 1945.

Brown, E. A.: The use of intravenous ethyl alcohol in the treatment of status asthmaticus. Annals of Allergy 5:193, May-June 1947.

CHOLECYSTECTOMY AND TYPHOID CARRIERS

In 1913, Leary, an Army doctor, reported one of the earliest attempts to clear up the typhoid carrier state, by cholecystectomy. His two patients were young soldiers, one of whom had a chronic biliary fistula which discharged a clear mucoid material. Cultures of this discharge revealed that it was a pure colony of typhoid bacilli. Stools also were positive for the same organism. At operation, a stone was found impacted in the cystic duct. The gallbladder and cystic duct were removed; the stools were negative, and recovery was uneventful.

Leary's second case, at operation, was found to have a distended gallbladder full of stones. The gallbladder contents cultured out pure typhoid bacilli. After cholecystectomy, recovery was complete, stools became negative.

In spite of this report, cholecystectomy was for some years regarded with considerable disfavor, in correcting the typhoid carrier state. Lately, however, it has come to be accepted as a valuable treatment. Stout and his associates recently have reported a case, similar to those mentioned above, in which the typhoid carrier state was eradicated when the gallbladder, containing typhoid bacilli and small stones, was removed. Results were not entirely unequivocal, however, for penicillin and sulfathiazole were also used. However, these drugs cannot be assumed to take the place of surgery, in the treatment of chronic foci of infection.

Five years ago, Saphir and his associates suggested that before cholecystectomy be resorted to, particularly in carriers past 50 years of age and in the presence of a well functioning gallbladder, soluble iodophthalein should be considered. Of 65 bile carriers treated with iodophthalein, the bile was sterilized in 32.3 per cent and the stool was freed of typhoid bacilli in 7.6 per cent.

SUGGESTED READING

Stout, S. L., et al.: Typhoid carrier state-treatment by cholecystectomy. Jour. Kansas M. Soc. 48:273, June 1947.

Saphir, W., et al.: The typhoid carrier problem. J. A. M. A. 118:964, March 21, 1942.

Beckman, H.: Treatment in general practice. Philadelphia, W. B. Saunders, p. 338, 1946.

R. W. C.

Consultation Service

This special consultation information service is offered as a regular monthly feature of *Postgraduate Medicine*. Readers are invited to call on this Service for answers to difficult medical problems from members of our Editorial Board best qualified to help. Each question will be answered by mail and those of general interest will be published each month. Address all communications to Consultation Service, *Postgraduate Medicine*, 512 Essex Building, Minneapolis 2, Minnesota.

NEPHROSIS

QUESTION: 1. In a child aged 7 with massive albuminuria and anasarca, without hypertension, hematuria or azotemia, is one justified in diagnosing "pure nephrosis"?

M.D.—Missouri

ANSWER: This the nephrotic syndrome. It occurs most commonly as a stage or phase in the course of glomerulonephritis or as a result of the action of some poisons such as mercuric chloride. Extremely rarely a "pure or lipoid nephrosis" seems to exist without evidences of glomerulonephritis or poisons.

2. Is nephrosis a tubular disease and nephritis essentially a glomerular disease?

ANSWER: No. Abnormality of both tubules and glomeruli exists in both nephrosis and nephritis. In nephrosis the glomerular capillaries are abnormally permeable just as are the capillaries throughout the body with the resulting loss of plasma protein; tubular absorption of water and sodium chloride from the glomerular filtrate is not impaired. Albuminuria and generalized edema results. Hypoproteinemia is common as a result of the albuminuria and high-protein edema fluid and the impaired gastrointestinal absorption and hepatic utilization of nitrogenous foods but the abnormal capillary permeability seems to be the primary factor. Tubular destruction found in fatal cases of mercuric chloride poisoning is not indicative of the pathologic physiology of the nephrotic syndrome. In nephritis there are inflammatory changes in the glomeruli as well as abnormal capillary permeability.

3. What is the usual course and prognosis of nephrosis?

ANSWER: The course of the nephrotic syndrome varies with its etiology and is very often complicated by so-called nephrotic crises of peritonitis, pleuritis, etc., due to pneumococcus, streptococcus or other bacteria. If the patient survives these crises, which is more frequent since specific chemotherapy (sulfonamides, penicillin and amino-acid solutions) for parenteral administration have become available, recovery from the nephrotic syndrome is frequent. The fundamental therapeutic problem is the detection and elimination of the cause of the abnormal capillary permeability, be this a poison such as mercury or an infection such as an alveolar abscess or a pharyngitis. Diuretic measures are important to minimize the edema which interferes with the function and nutrition of all tissues and organs of the body. If etiologic factors and edema can be controlled, the prognosis is good.

COCCYX DEFORMITY

QUESTION: How frequently is a previous fracture or a deformity of the coccyx a factor in dystocia? Is cesarean section indicated in a multipara who had a previous normal delivery except for severe postpartum pain in the region of the coccyx and some third stage delay?

M.D.—Ohio

ANSWER: It is not likely that a previous fracture, deformity, or fixed anteflexion of the coccyx may be a factor in dystocia. The patient cited probably had a contraction of the pelvic outlet, as with a narrowed subpubic arch and transverse diameter without compensatory lengthening of the posterior sagittal diameter. It is in the latter diameter that the coccyx becomes one point in the several producing outlet dystocia.

This patient should not require a cesarean section based solely on the symptoms noted at the time of her first delivery. Does not the questioner mean late second stage delay rather than third stage delay?

DIZZINESS ASSOCIATED WITH PREGNANCY

QUESTION: What is the etiology, frequency, and treatment of dizziness in normal pregnancy? *M.D.—North Dakota*

ANSWER: Dizziness during pregnancy may originate from several causes and is not common to early pregnancy. It is usually a manifestation of some abnormality, and treatment depends upon its cause.

Disturbances of eyes and ears must be considered; anemia may produce this symptom; dizziness may be one manifestation of toxemia early in pregnancy with nausea and vomiting; it often accompanies toxemia late in pregnancy of the hypertension type.

Vasomotor disturbances, and the usual overactivity of the pituitary during pregnancy could be causative factors. It is not usually a symptom of noteworthy significance except in toxemia of late pregnancy. It may be more annoying than serious.

PERNICIOUS ANEMIA

QUESTION: A patient, 68 years old, with pernicious anemia, treated with liver for two years, has developed numbness and tingling in the toes but not the fingers. Vibration and joint sense are moderately diminished in the feet only. Can a diagnosis of subacute combined sclerosis be made? Are thyroid, or vitamin B of value? Is crude liver preferable to the ordinary parenteral liver concentrates in this complication? *M.D.—Illinois*

ANSWER: From the findings, it is certainly presumptive evidence that the person has subacute combined sclerosis and would indicate that he had not had adequate amounts of liver extract. The amount necessary is much greater for some persons than it is for others. Frequent injections are more effective per unit of material than are infrequent ones. Thyroid and vitamin B are of little or no value on theoretical grounds. Crude liver is preferable to the refined preparations, but even the most potent liver concentrations seem to have this material in them. If the patient has any sort of systemic reactions to the crude liver preparations, I certainly would stick to the highly concentrated ones.

COMPRESSION FRACTURES OF VERTEBRAE

QUESTION: I have a patient with a slight compression fracture of the body of the sixth thoracic vertebra. The orthopedic consultant advised treatment by bed rest only, but with a board under the upper part of the mattress. The patient is in good condition and was free from pain at the end of three weeks. The consultant believes the patient can walk by the end of the seventh week and probably resume very light work if the x-ray checkup at that time reveals the anticipated progress. Can compression fractures of the vertebrae heal so quickly, or is this probably a hazardous plan of treatment? *M.D.—Wisconsin*

ANSWER: Compression fractures of vertebrae do not heal in six weeks. However, in slight compression fractures of upper thoracic vertebrae there is moderate support given by the thoracic cage, permitting guarded activity at this early stage. Careful observation should be continued. Vigorous activity should be avoided, and this applied particularly to lifting and bending strains. If pain recurs, recumbency should be resumed and external support applied. Complete healing of the injured vertebrae cannot be anticipated within twelve weeks. Healing is evident when, clinically, local tenderness has disappeared and, in the x-rays, there is no evidence of further compression.

The above conditions apply to a middle aged patient in good general condition. The variables of age, physical type, nutrition, and normal activity must be taken into consideration.

Men of Medicine

FROM THE OLD SCHOOL TO THE NEW

The comfortably old-fashioned home of Dr. Rudolph Matas is a storehouse of memories. Behind each painting, each bit of bric-a-brac, is a story, which the doctor, spry for all his 87 years, loves to relate in his soft, friendly voice.

The cellophane-covered bas relief of Lafcadio Hearn, for instance, recalls the days nearly sixty-five years ago when the 23-year-old doctor and the writer walked through the quiet New Orleans night developing the patterns for some of Hearn's literary masterpieces.

Matas had been graduated from Tulane University shortly before, and in addition to practicing medicine was editing the *New Orleans Surgical and Medical Journal*. He had become acquainted with Hearn through reading his translations of de Maupassant, Gautier, Loti, and Zola. It was at this time that Hearn was forming his fantastic stories and he drew liberally from the young doctor's vast knowledge of medical lore.

On a table in the living room is one of Dr. Matas' most cherished scrapbooks. It is an account of his trip to Havana, Cuba, in 1940 when he was honored as the only living man who had worked with Dr. Carlos J. Finlay, the discoverer of the insect carrier of yellow fever. Dr. Matas was a member of the yellow fever commission sent to Cuba during the yellow fever outbreak there, and is the commander of the National Cuban Order of Carlos Finlay. The occasion of Dr. Matas' visit was the 100th anniversary of Dr. Finlay's birth.

In another corner of Dr. Matas' living room is a marble bust of his late wife, carefully covered with white paper to keep off the dust. She died in 1918, leaving a son by her first marriage, and later one of Dr. Matas' students in medical school.

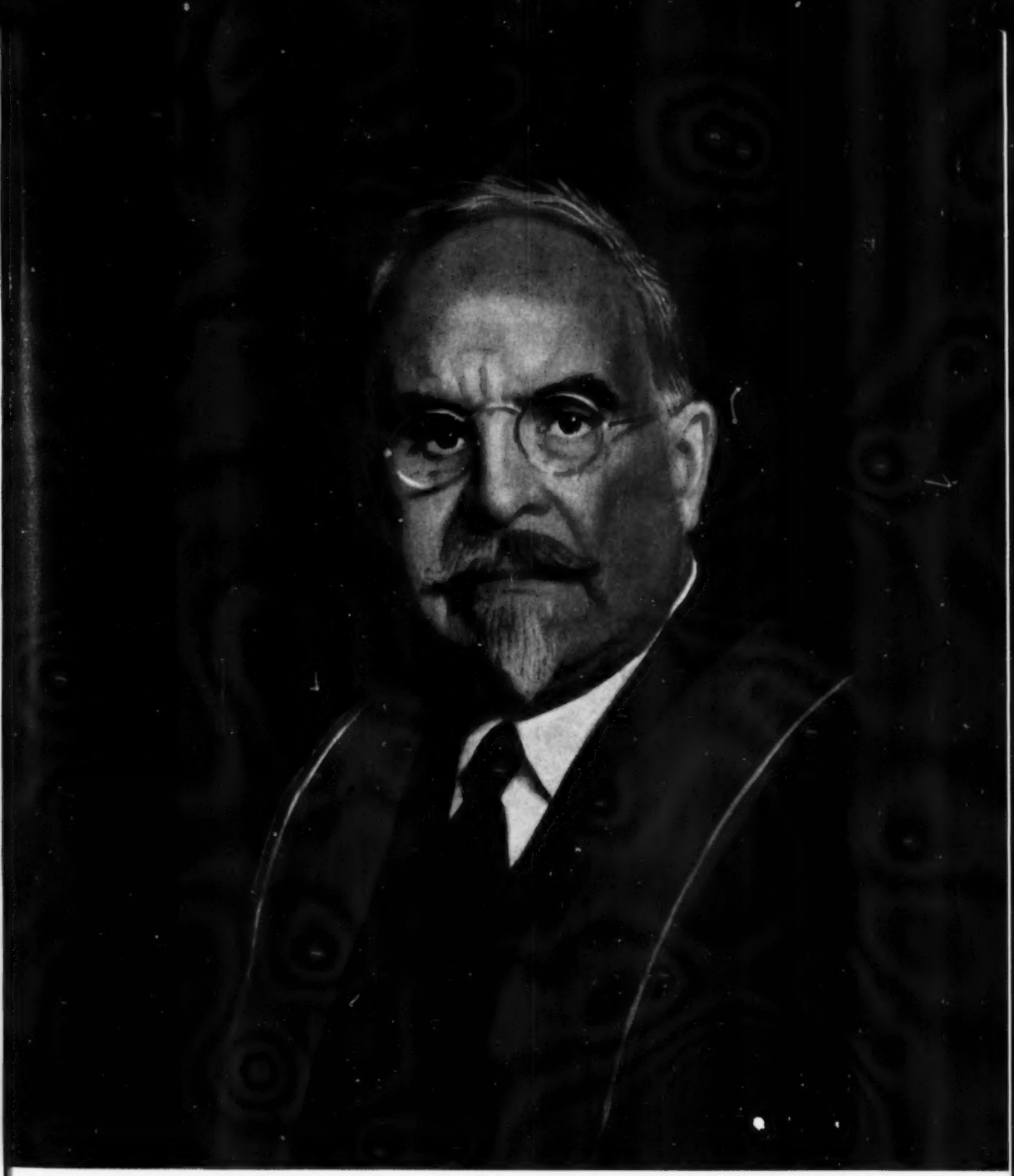
In another corner of the room is another reminder of Dr. Matas' wife—a player piano and a case containing a large number of player piano rolls. She and Dr. Matas had spent many evenings together alone with that instrument, playing works of Bach, Beethoven and Brahms, and other great composers, of which both were very fond. Early in his youth, he had taken piano lessons from a very exacting teacher, but when the young man started to practice medicine, he had to drop his studies.

Dr. Matas is short and rather stockily built, with white hair and white beard and mustache. Although somewhat bent with age, his manner is youthful and he is as much interested in the future as in the past. This spring he was busy leading a fund campaign for a New Orleans hospital but he took time off to fly to Atlantic City for the convention of the American Medical Association, and then on to Boston.

He is an ardent bibliophile; on his library shelves are many priceless volumes of medical and surgical periodicals, and medical history. A china cabinet in the room is filled with letters, documents and other papers, material for an 11-volume history of Louisiana medicine and of the Louisiana State Medical Society, which he, with Mrs. Slattery Aleman, is writing with the hope that the Louisiana legislature will provide funds for its publication.

The publication of the history is only one of his many current projects. Another is the revival of the International Surgical Society, which became disorganized during World War II. As the original president of the society and now the secretary-general, he has a keen interest in its being perpetuated to keep high the standards of surgery throughout the world. In September the 87-year-old surgeon will fly to London to attend the society's first post-war meeting.

His conversation ranges far and wide—from a trip he had once made to view the Matterhorn to



FROM THE PAINTING BY THOMAS C. CORNER

COURTESY, AMERICAN COLLEGE OF SURGEONS

Rudolph Matas

This portrait reproduction was presented to POSTGRADUATE MEDICINE *by Ethicon Suture Laboratories.*

his original operation for aneurysm which had brought him his greatest renown.

The way to the dining room in the Matas home leads down a long hall, furnished with such varied items as bronze lamp stands, bookcases and an old-fashioned music box that plays records a yard in diameter, with beautiful and rich tones.

The long dining table is set in a high-ceilinged room, with a huge high-mirrored sideboard on one side. At one end are two china cabinets. The innumerable trinkets in one, Dr. Matas explains, are objects that he had picked up during his travels in Europe. When his friends and former students bring their children and grandchildren with them on their visits. these trinkets are wonderful playthings.

The other china cabinet is filled with his "trophies." Practically all are silver, and range from teacups to very elaborate and ornate loving cups. They are souvenirs of many surgical operations, presented by patients cured by his skilled hands and alert mind.

Dr. Matas' stories and anecdotes reflect what he has written in his famous monograph, "The Soul of the Surgeon," that the life of a surgeon, "though a hard one, is indeed a beautiful life."

"It is, indeed, an impassioned and troubled life, that is ours," he wrote. "One in which we can scarcely claim a single moment of mental ease and quiet. It has its great joys, its superb and glorious hours; but it also has its tragic hours, its hours of bitterness and desolation. And yet, the real honest surgeons all love it. They love it in spite of its fatigue, its worries and its emotions."

He was a horse and buggy doctor in his early days, performing many operations by candlelight or the light of the oil lamp, in the homes of his patients and in the hotel rooms.

One early experience in surgery left a deep impression on Dr. Matas' memory. As an intern he had gone with Dr. Richardson of Tulane to assist him in an operation at the St. Charles Hotel. The patient was the sister of Jefferson Davis, former president of the Confederate States. Dr. Richardson carried her gently from her bed and placed her on the operating table in the adjoining room.

"Dr. Richardson was a splendid, tall, strong man," Dr. Matas relates. "When the operation was completed he took her in his arms, laid her gently back into the bed, and kissed her. I shall never forget that."

Operating in hotels and homes, before there were the hospital facilities, that we have today, he said, was not so easy.

"I remember I was called to perform an operation in a patient's home during a terrific thunderstorm. The lightning was flashing everywhere and every instrument I picked up seemed to be charged with electricity."

He is glad that advances in science have taken care of many of the factors that were nightmares in the surgeon's life.

"Many times we had to hitch up the horses and drive frantically in the response to a call from a hysterical mother whose child was dying of diphtheria. Often we would hardly have time to pick any instruments to take with us. Sometimes when we would cut into the suffocating child's swollen throat, the blood would shoot out. The mother, holding a lamp over the child for us to see, would faint and drop the lamp. We would have to pick up anything we could find to thrust into the child's windpipe to hold it open and at the same time see that the house did not catch fire. Thank goodness, diphtheria immunization has put an end to those nightmares."

But the old days were not all nightmares. There was compensating amusement and adventure. Dr. Matas can recall the old duelling days in New Orleans when as many as six victims were brought to the hospitals with injuries every twenty-four hours.

"I was a surgeon at the last duel fought in New Orleans. Two young cocks were members of old artistocratic families that had lost their money. They started an argument over a drug store counter where one of them was dispensing sodas. So they decided to fight it out, choosing foils as their weapons.

"They selected as their seconds a couple of fencing instructors who had made good money in the old duelling days, training the fighters. When the time came for the duel another medical man and I were selected as the surgeons to treat their

wounds. We two got the boys together and agreed that the duel would stop as soon as the first blood was drawn.

"The seconds were not very happy about that, because they wanted to see a real fight.

"The two had not slashed at each other very long before one was nicked in the arm.

" 'First blood,' I said, holding up my hand for them to stop. 'First blood,' said the other surgeon.

"The youngsters relaxed and we all looked very carefully at the arm in question.

" 'Only a mosquito bite,' said the disappointed seconds.

" 'No, that's blood,' I said, giving the arm very close inspection.

" 'He's right,' agreed the other surgeon. 'That's blood. The duel's over.'

"The boys agreed, and laid down their weapons. And I never saw two happier young men; they were so thankful that the duel was over and the point of honor had been settled without any more perceptible amount of bloodshed."

Long after, when duels were a memory in the minds of the people of New Orleans, and many doctors had taken to the automobile, Dr. Matas kept his horse and buggy.

"But one of my colleagues was so anxious to expand his practice that he would keep the harness suspended over the back of his horses, as was the practice in the fire engine houses, so that he could have the animals hitched and get to his patients as soon as possible. To be sure he was the first to recognize the possibilities of the automobile and was one of the first to buy one.

"Then he persuaded me to get one. But I could not master it. I would keep running into a tree or a fire plug. I found that to drive a car successfully I had to keep my mind on that and nothing else. But I was forever thinking about my patients and other work I had to do. So I gave up driving."

Sometimes as often as once a week, he would stay up all night without sleep. On one occasion he stayed up for fifteen nights in succession, putting in a full day's work in the hospital and at Tulane University.

"I was glad to be relieved of the discipline of teaching," said Dr. Matas, who retired as professor of surgery at Tulane in 1927. He had taken that post in 1895, and had been demonstrator in anatomy at Tulane for ten years previously. "That bell would ring always at the same time, regardless of how late I had been up the night before. And regardless of how late I had been up, or whether I had gone to bed at all, I had to keep my mind clear. I am glad I don't have to hear that bell any longer."

DR. MATAS was a gentle instructor. It is said his students and internes would "follow him around like puppy dogs." He was a liberal grader. If on their examinations some of the boys received grades he thought were too low, he would raise them. He also would never ask a student to do something he would not do himself, and he always set an example of hard and diligent effort. He was reluctant to let a student fail in his final year at medical school, believing that if a student were unable to get through medical school and make a good doctor, this would have shown up long before he had reached the final year.

In starting out as professor of surgery, he began the practice of having monthly examinations, and if the students passed the monthly examinations they would not have to take the finals. It was soon discovered that the medical students were studying surgery to the exclusion of most of their other subjects. So this practice had to be stopped.

Dr. Matas said he belongs to many clubs but doesn't go to any. He has never been active in any sports.

"If I had it to do again, I think I might have indulged in sports," he remarked. "I think tennis is a wonderful thing to exercise the muscles of the body. Golf has been a fine thing in bringing diplomats together. The British have used golf for many years in bringing about favorable treaties. And I think bridge would be good as a form of mental activity."

But Dr. Matas' home is a center of his life.

"I love my home above everything else. I have a limited circle of friends—friends who are staunch and believe in my honesty. I like to invite them in for good conversation."

He is not a recluse, by any means. He loves New Orleans and seems to know every cranny of that

ancient and colorful city. He is widely known in New Orleans not only as a man who has helped bring fame to the city, but also as an ordinary citizen. In the French quarter, a driver of a sightseeing cab hailed him with "Hello, Dr. Matas. How are you today?" This is typical of the reception he enjoys.

He is one of the city's and the state's most steadfast citizens. He writes letters to editors and members of the state legislature, urging measures for good government. He also speaks at meetings of citizens' committees. When Huey Long was governor and wanted to appoint staff members of the Charity Hospital at New Orleans on the basis of politics, Dr. Matas became a thorn in the King Fish's side.

Nowadays Dr. Matas works at home in the rooms upstairs. He seldom goes to his office except for an occasional consultation. Upstairs, as down, books are to be found in abundance, and in many languages.

Dr. Matas as a young man had learned Latin from an exiled anti-czarist prince in Mexico, who "was intoxicated with the splendors of ancient Roman oratory." He learned Greek from a Presbyterian minister in Mexico. His early education was obtained in Paris, Barcelona, Spain; Brownsville, Texas; Matamoras, Mexico, and New Orleans. So he can speak French, Spanish and the Catalan dialect. He can also speak Italian. His linguistic range made him a marvel to his interns. As he went from bed to bed in the hospitals he would address his patients in English, French, Spanish or Italian.

DR. MATAS subscribes to all important surgical journals from the United States, France, England, Spain and Germany, and has had them bound and placed on the shelves in his library for reference. Those who in the past have been amazed at the thoroughness of his knowledge and his prodigious memory when he took part in a discussion at a scientific meeting, probably were not aware that he had consulted all the material of any value that had been published.

Having performed more operations in vascular surgery than any other individual, he has made abstracts of everything that has been written on the subject. His notes fill 37 letter cases, sufficient material for two or three large volumes.

In his library are trunks of photographs of his work, his travels, stacks of diaries and scrapbooks on many subjects, enough to fill many volumes of work valuable to the doctor, scientist, and general reader.

Besides his desk in his well-stocked library is a couch which is a depository for his current mail —letters from friends, colleagues and others all over the world, popular magazines, medical and scientific journals. In every room on the second floor are books and magazines, beautiful and rare histories of Spain and his ancestral Catalonia; popular novels that he and his wife read together; works by many authors great and near great, in many languages. There are thousands of volumes showing a wide and catholic taste.

In his own bedroom is a table piled with current magazines, and a bookcase, filled with current books of all kinds, stands close to his tall, four-poster bed.

"Every time I go to bed at night these books say: 'When are you ever going to get around to reading us?' I do the best I can, and read practically every night," Dr. Matas commented.

Laid out on a table in another room is an array of velvet-lined jewel cases containing medals awarded him for his achievements in surgery. There is the famous Bigelow medal, more than three inches in diameter.

"That's solid gold," Dr. Matas commented. "There must be more than $100 worth of gold in that."

Picking up the medal given him in Madrid in 1932 when he was made a Knight of the Civil Order of Alfonso XII of Spain, he said "That is certainly a beautiful piece of work." He was made an Officer of the Order of Public Instructors in Venezuela in 1925; a Chevalier of the Legion of Honor in France in 1932; a Knight of the Order of Isabelle the Catholic in Spain in 1934; a Commander of the National Cuban Order of Carlos Finlay in Havana; an Officer of the Order of Leopold in Belgium in 1939, and was the recipient of the first distinguished service medal of the American Medical Association in 1938.

Dr. Matas' medal collection is rivalled by his many parchments representing other honors. He has received honorary degrees of doctor of laws from Washington University, the University of Alabama, and Tulane University, and honorary degrees of doctor of science from the University of Pennsylvania and Princeton, and the *honoris causa* from the University of Guatamala.

"There are more documents than this," he said. A large suitcase was packed full of more diplomas; honorary presidency of the International Surgical Congress, honorary membership in the Royal Academy of Medicine at Rome, in the Association of Polish Surgeons, and the Society of Italian Physicians in America; corresponding membership in the Peruvian Surgical Society, Societe Nationale de Chirurgie of France, Medical Society of Copenhagen and the Surgical Society of Madrid; corresponding fellowship in the Royal Academy of Medicine and the Catalonian Medical Society; honorary presidency of the Surgical Society of Barcelona, membership in the Society Internationale pour l' Histor de la Medicine of France, and others.

These honors have come to him as a great pioneer in surgery, who lived in a period when surgeons were given their greatest opportunity in history to show what their science and art could do in the healing of human ills.

Most famous for his vascular surgery, Dr. Matas up to 1940, had performed 617 operations in this field, of which 248 were for aneurysms. His early interest in aneurysms is attributable to the fact that the successful ligation of the great arteries for aneurysm was regarded as one of the outstanding accomplishments for surgery.

Possibilities of improving upon this form of surgery provided a powerful incentive to young men entering this field. Dr. Matas' cures with his method of endo-aneurysmorrhaphy brought worldwide attention. It was considered the greatest achievement in this field since John Hunter's ligation in 1785. In the fifty-eight years since Dr. Matas performed his first operation of this type no significant alterations in the technic have been made.

In his pioneering work in vascular surgery, he and his colleagues developed the Matas-Allen band —a flexible, flat, removable aluminum band for the occlusion of the large arteries. He developed a method for testing the efficiency of the collateral circulation as a preliminary to the occlusion of these vessels. He also developed a method for reducing the calibre of the thoracic aorta by the plication or unfolding of its walls by lateral suture.

Grateful to Dr. Matas for the prolongation of her life through his vascular surgery, the late Miss Violet Ida Hart in 1933 created the Rudolph Matas award, and a gold medal, the Matas Medal, to be given at intervals for the most outstanding work in that field. Only one other surgical distinction as great as the Matas medal exists in the United States today. That is the Bigelow Medal, conferred for general surgery by the Boston Surgical Society in memory of Dr. Henry James Bigelow.

Dr. Matas was the first to use the intravenous drip method for the administration of glucose and saline solution, and the first to extend a tube into the stomach for drainage in intestinal obstruction. He was also one of the first surgeons successful in the removal of the larynx.

Developing a special form of air pump, Dr. Matas was the first surgeon in the United States to apply positive pressure to permit the patient to continue breathing while undergoing surgery of the thorax.

In the surgery of jaw fractures he made notable contributions. He developed a new method of reducing and securing the fixation of displaced fragments in zygomatic fractures. He also applied a simple expedient in treating complicated fractures of the lower jaw in conditions forbidding the use of splints or intrabuccal prosthesis.

In all, Dr. Matas has published 400 papers, describing his achievements and contributed chapters in many books on surgery; has invented 10 major devices in surgical operations and developed 26 major surgical procedures.

THE humble and unassuming author of these brilliant achievements is a descendant of sturdy, long-lived, prolific and industrious Catalonian ancestors. His father, Dr. Narcissus Hereu Matas, and his mother, Theresa Jorda Ponsjoan Matas, were each one of a family of nine children, born in Catalonia.

Immediately after their marriage, his parents migrated from Europe to New Orleans, where Dr. Narcissus Matas established a pharmacy, and started to study English and medicine at the New Orleans School of Medicine, where he was graduated in 1859. Shortly after his graduation fire destroyed the pharmacy, and he and the family moved to Bonnet Carre, Louisiana.

THE renowned New Orleans surgeon was born September 12, 1860, in that town which was subsequently washed away in a Mississippi River flood. The father's medical career was interrupted by the Civil War, and after a successful venture in the cattle business, he took his family to Paris in 1864, where he studied ophthalmology. Young Matas had not learned to speak English. His infant words were Spanish, but in Paris he learned French. Two years later the family moved to Barcelona, Spain, where the father established himself as a licentiate of the University of Barcelona and a specialist in ophthalmology.

They remained in Spain until 1867, when the family returned to America. By that time the boy had learned to speak French, Spanish and Catalan fluently. Yellow fever was raging in New Orleans, and young Rudolph suffered his first of four different attacks.

They moved out of the city and went to the Rio Grande Valley, where the elder Matas found a remunerative medical practice with a wealthy Spanish firm that engaged him to take care of its employees in Brownsville, Texas, and Matamoras, Mexico.

Young Matas learned to speak English at the Brownsville public schools. In 1870 he was sent to New Orleans to study in the literary department of Soule's College for two years. Returning to Matamoras, he was graduated from the Literary Institute of St. John in 1876.

"I found the going hard, and the Mexican Indians in the school gave me such stiff competition that I became ashamed of myself," Dr. Matas recalled. "They had a phenomenal memory and ability to learn. I decided I had to get the better of those fellows, and as a consequence I acquired a great deal of knowledge—the result of vanity."

After school hours, young Matas worked in a pharmacy belonging to a friend of his father's at Matamoras, and acquired a great deal of knowledge of therapeutics and materia medica. This gave him a head start when he matriculated at the Medical School of the University of Louisiana, which is now Tulane. He progressed rapidly, and in 1877 won in competitive examination the post of resident intern at Charity Hospital. Upon his graduation in 1880 he became chief of the clinics at the hospital and demonstrator in anatomy. He became professor of surgery in 1895 and started specializing in that field at that time.

The spirit of revolt against the ancient methods of surgery was in the air at that time. In almost every direction surgery offered a challenge to the young, imaginative, inquisitive and active mind.

Soon after his graduation Dr. Matas visited the hospitals in Paris, studying their methods, and spent a summer in the University of Barcelona. There were no graduate schools at that time in the United States, but he endeavored to improve his opportunities in anatomy and surgery by visiting in New York, Boston, Chicago, and Washington, where he spent a good part of his summers in the Surgeon General's Library, through the friendship of Dr. John Shaw Billings.

His brilliancy, his conscientiousness and other high qualities early in his career gained him the high esteem of the people of New Orleans. When the death of Dr. A. B. Miles in 1893 left the chair of surgery at Tulane vacant, the university began seeking a successor in other cities. The doctors of the city, the general public and the newspapers went up in arms. They demanded that Dr. Matas be appointed to fill the post. The people wrote letters to the newspapers, the newspapers carried stories and editorials day after day demanding his appointment to the chair, and the university finally relented.

Dr. Matas' activities in addition to his practice and teaching have been extensive. In 1887-88 he was one of the organizers of the first polyclinic postgraduate school in New Orleans, in which he conducted for nearly nine years a course in operative surgery and surgical anatomy.

Shortly after his graduation from Tulane, he was elected physician to a benevolent association,

one of the many cooperative societies in New Orleans. He cared for more than 300 families with an annual remuneration of $600.

In one of the halls of the Touro Infirmary, one of the large and modern hospitals in New Orleans, is a large bronze portrait medallion of Dr. Matas. He was chief of the surgical staff there from 1907 to 1935, and in the early years of his teaching brought his students there for study. Dr. Matas was to a great extent responsible for the success of Touro Infirmary. The portrait was presented to the hospital in recognition of his efforts in promoting that institution. In recognition of his contributions of books, journals, time, and effort to the medical library at Tulane, it was named the Rudolph Matas Medical Library.

In addition to supporting these and other New Orleans institutions, Dr. Matas has been the leading exponent of medical education in Louisiana. During his presidency of the Louisiana State Medical Association in 1894 and 1895, he was largely responsible for the Louisiana State Medical Practice Act. He has been a relentless leader in every effort during most of the last fifty years to improve the city's sanitation and public health. As a result of much of this local effort, he was given the New Orleans Times-Picayune award for community service in 1940. He boldly and persistently fought public opinion for years in bringing protection for the people of Louisiana against yellow fever, malaria, typhoid, typhus, cholera, bubonic plague, smallpox, diphtheria, and scarlet fever.

Among his many other activities, Dr. Matas was the organizer and director of Tulane Unit, Base Hospital 24 for service in France, director of the New Orleans School for Intensive Surgical War Training during World War I, former president of the American Surgical Association, the Southern Surgical Association, American Association of Thoracic Surgeons, Louisiana State Medical Association, New Orleans Medical and Surgical Association, and former vice president of the American Medical Association, American Society for Clinical Surgery, and the Pan-American Medical Congress, of which he was also honorary president.

His is an honorary fellow of the Royal College of Surgeons in England, and honorary member of the New Orleans Illinois Central and Mississippi Valley Railroad Surgeons, American Association for Traumatic Surgery, New York Academy of Medicine, American Society for Regional Anesthesia, Boston Surgical Society, American Society for the History of Medicine, and the Philadelphia Academy of Surgery.

He was a member and rapporteur on arterial surgery at the International Medical Congress in London in 1913, member of the Association Francaise de Chirurgie, rapporteur and by invitation an honorary president in 1922, and honorary president of the International Surgical Congress in Warsaw in 1929.

As one of the organizers and a former president of the American College of Surgeons, he has fought for higher standards throughout the nation in that profession.

In a speech in 1932 he expressed the opinion that the medical profession, "and especially the surgical branch of it, I am ashamed to say, is infested like the tropical seas, with numerous sharks who prey and fasten themselves upon their suffering and helpless fellows. To any thoughtful observer, the evidence must be convincing to prove that while immense and stupendous progress in lines of efficiency, has been accomplished in medicine in the lifetime of the present generation, the teaching of the principles of honest dealing and righteous conduct have suffered and failed to keep pace with the intellectual and scientific advance of the age. In this we are not singular, but suffer as all other professions, from the general moral laxity that seems to pervade the whole social and political fabric of our civilization." He still holds to that belief and still is fighting against frauds in his profession.

Dr. Matas said he has subordinated practically everything for his work.

"I do not believe that is always the best thing, but I have loved my profession," he commented. "I have tried to be temperate and have tried to keep the commandments."

Book of the Month— A Report

SURGICAL PATHOLOGY*

EVERY surgeon will find the sixth edition of William Boyd's "Surgical Pathology" a stimulating and helpful volume. From the first edition through all the subsequent revisions this work has presented pathology in a manner that is encountered in the operating room.

The author states that the early pathologic changes in tissue are the most important to the surgeon because he is called upon to handle problems at the time of an operation and his decision many times will be based on these changes. It is with this idea that the material is presented.

The material is well organized and is presented in a direct orderly manner. The first nine chapters deal with general pathologic material which is of surgical importance. The remaining twenty-five chapters deal with the pathology of organs or systems. The style is clear and to the point. In the more important conditions, the discussion is based on the pathogenesis, etiology, morbid anatomy, pathologic physiology, complications and prognosis. It makes for a comprehensive discussion and the author has the ability to give the essential facts in an easy readable form. The author purposely includes the summarization of the clinical features of many conditions for the purpose of demonstrating the relation of pathology to symptomatology.

The new material added to this edition is a section on the pathology and pathologic physiology of congenital heart disease because this condition has recently come under the realm of surgery. The other new material presented includes tumors of the larynx, pinealoma, Bittner's milk factor in relation to breast carcinoma, avitaminosis in cancer of the mouth, the Papanicolaou vaginal smear method in diagnosing carcinoma of the cervix, fibrous dysplasia of bone, inflammatory nodules of muscles in chronic arthritis and fibrositis of the back.

Following each chapter there is a well chosen list of references. The references are grouped according to various phases of the subject under discussion. This makes it easier to pick references for study of the particular phase on which one wants more detailed information. In looking through the references one sees that the author has utilized many current articles which undoubtedly has made this volume such a timely and current handbook for the surgeon. Only the most important references on the subject are given. A reference in a foreign language is only given when such information is not obtained in English.

The chapter on inflammation and repair is full of basic information having a direct bearing on surgical practice. "Inflammation is the most important as it is the most universal of all pathologic processes. Being the local reaction of the living tissues to an irritant, it follows that some degree of inflammatory change is present wherever the tissues are subjected to the action of an irritant. No matter, therefore, how aseptic an operation may be, it must inevitably be accompanied by some degree of inflammation."

There are three main phases of the inflammatory process, namely, the vascular changes, the formation of the inflammatory exudate and the process of repair. Each of these phases has a specific function: "The vascular changes are not intelligent responses, nervous in origin, but are due to

*Surgical Pathology. By William Boyd, M.D., Professor of Pathology, The University of Toronto, Canada. Sixth Edition. 858 pages, with 530 illustrations, including 22 color figures. Philadelphia and London: W. B. Saunders Company, 1947. Price $10.00.

the action of the irritant on the walls of the vessels. The walls of the small arteries and veins are of course largely composed of muscle, but the investigations of Krogh have shown that the capillaries are also actively contractile tubes. The dilatation of the vessels, with the accompanying engorgement and transudation, are due to the irritant paralyzing the contractile elements in the vessel walls.

"Within recent years Menkin has published a series of experimental studies on the mechanism of inflammation, now collected into a monograph entitled 'The Dynamics of Inflammation.' He has succeeded in isolating chemical factors from experimentally produced inflammatory exudates, factors which appear to play an important part in the mechanism of the process. One of these factors, which he calls leucotaxine, induces a prompt increase in the permeability of normal capillaries. It seems to be an intermediary breakdown product of protein metabolism. When this substance is injected locally the increased capillary permeability is followed by the rapid migration of polymorphonuclear leucocytes. It is definitely chemotactic. Another factor in the exudate is capable of causing marked leucocytosis in the normal animal. This factor does not appear to be related to leucotaxine.

"Sir Thomas Lewis has suggested that a histamine-like substance, which he calls H substance, is liberated at the site of inflammation, and that this is responsible for the increased vascular permeability. The evidence in support of this appears to be less conclusive than in the case of Menkin's leucotaxic factor."

In chapter six, entitled, "Hemorrhage, Thrombosis and Embolism," the problems of blood loss and the mechanization of control are discussed. The uses of heparin, dicumarol and vitamin K are presented.

The thrombo-embolic phenomenon is discussed at some length. This condition has assumed considerable importance recently because of the controversy that has developed in regard to treatment and management of intravascular thrombosis. The author differentiates the thrombosis into two groups. When the thrombosis is associated and dependent on inflammation of the vein wall the process is called thrombophlebitis. Venous thrombosis is the process where there is not an associated inflammation. The bland thrombus is one responsible for the pulmonary embolic phenomena.

Postoperative embolic phenomena fall into three groups: (1) large emboli occluding the pulmonary artery or a main branch with a fatal outcome in 90 per cent of the cases occurring in the matter of a few minutes, (2) emboli of moderate size which cause hemorrhagic infarction and consolidation causing pleuritic symptoms having a mortality of 15 to 20 per cent, and (3) small emboli causing mild symptoms with few or no physical signs and producing no deaths.

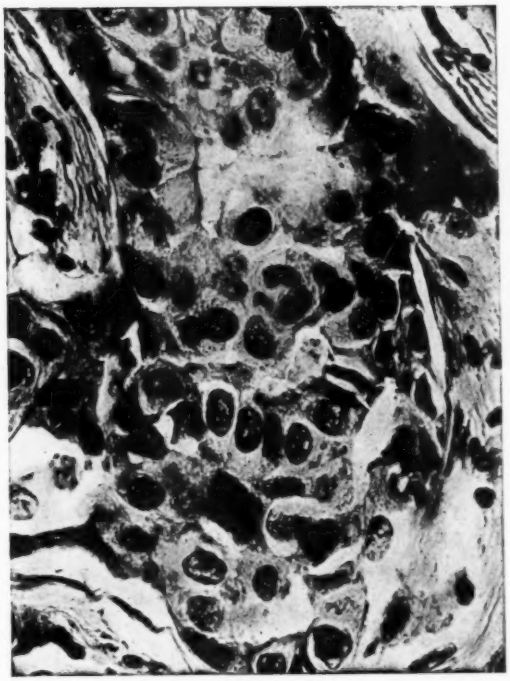
The chapter on tumors is developed by a discussion on etiology, spread of tumors, radiation of tumors, and classification. The author shows the relationship of carcinogenic hydrocarbons and estrogenic substances. In controlled mice experiments mammary cancer has been produced by estrin. It is postulated that estrogenic substances may be one of the factors in the complex process of neoplasia.

The section on radiation of tumors gives the surgeon fundamental information on this phase of tumor treatment. It is not intended to be comprehensive and detailed but sets forth the basic knowledge of radiotherapy. The biologic effect of the gamma rays of radium and of x-rays are given. The principles of radio sensitivity are presented and the effect of radiation is discussed, both as to its action on the tumor and its action on the tumor bed. Such information is helpful to a surgeon when referring a tumor case to a radiologist for therapy.

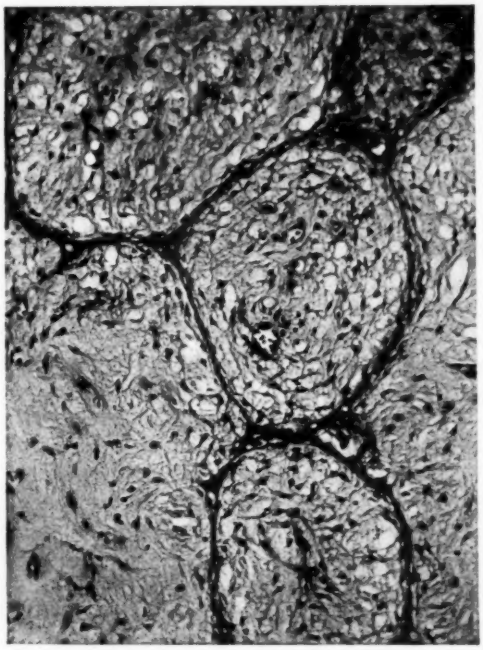
THE problem of peptic ulcer is presented in a detailed, thorough manner. Peptic ulcer, especially the duodenal type, has increased in frequency. Seventy per cent of the chronic ulcers coming to operation at the Toronto General Hospital were in the duodenum and thirty per cent were in the stomach. The surgeon probably sees a special class of cases, those having symptoms of obstruction or hemorrhage or perforation. At the same hospital the autopsy material revealed that the chronic ulcers were slightly more frequent in the stomach.

It seems probable that not more than 5 per cent of cancers developed from ulcer. Very much less than 5 per cent of ulcer became malignant. Malig-

Carcinoma of the breast associated with lobular hyperplasia.

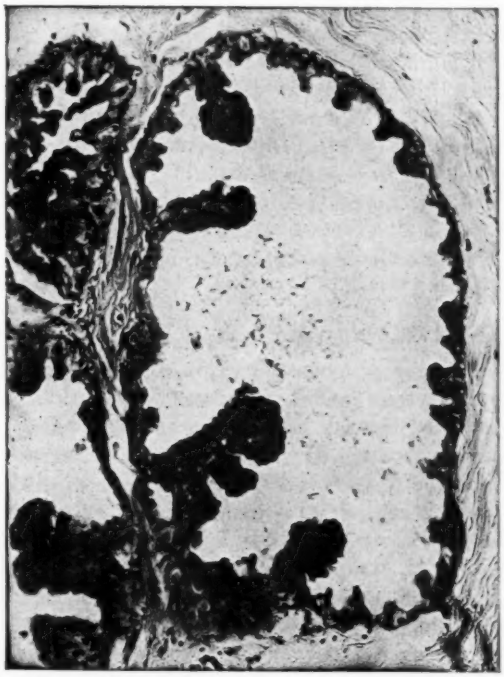


The cells of a medullary carcinoma of the breast; one mitotic figure. x 500.



Illustrations from: Surgical Pathology by Boyd

Intracanalicular fibro-adenoma. x 175.



Lobular hyperplasia, cystic. Epithelial hyperplasia with papillary processes projecting into cysts. x 125.

nant change in a duodenal ulcer probably never occurs.

Carcinoma of the stomach is classified into two chief types on the basis of the malignant cell, the cylindrical cell tumors, and the spheroidal cell tumors. The cylindrical cell tumor occurs as an adenocarcinoma or the cells may be arranged in solid masses. The spheroidal cell growths are usually diffusely infiltrating. Where the connective tissue stroma is abundant, the tumor is of the scirrhus type. Gelatinous degeneration may occur in either the cylindrical or spheroidal cell tumor and so called colloid cancer is formed.

The author considers a classification based on the gross appearance more satisfactory for the clinician, namely, (1) papillar, (2) ulcerating, and (3) diffuse infiltrating. He agrees with the dictum of MacCarty that if an ulcer has a diameter of more than 2 cm. it is likely to be malignant but cautions that there are many exceptions.

The pathology of the breast is devoted mostly to a discussion of chronic mastitis and carcinoma. The other lesions of the breast are discussed but, because of their importance, chronic mastitis and carcinoma are covered in greater detail.

Chronic mastitis the author states "is the root and center of all the difficulties in breast pathology." The condition is known by many various names. The author uses chronic mastitis but he thinks the term lobular hyperplasia of the breast, with its subdivision of localized or generalized, and cystic and non-cystic is preferable because it describes the basic pathological entity.

The author disagrees with the modern tendency to regard lobular hyperplasia as a dangerous, precancerous condition. To treat such conditions radically "reduces the surgeon to the level of a mere operator." The hyperplasia of the breast is the result of hormonal stimulation and such stimulation is considered to be a factor in the production of breast cancer. It is necessary that these breasts be examined regularly and in detail.

There are two factors detailed in the discussion of etiology of breast carcinoma. The first factor is the retention of irritating secretions in an inadequately drained duct system. Only 8.5 per cent of mammary cancer patients give a normal nursing history. The second factor is an irregular or abnormal ovarian stimulus.

Lobular hyperplasia, fibro-adenoma and carcinoma in the breast are contrasted in a manner most helpful to the surgeon. "In each of these three conditions the patient complains of a lump in the breast. In chronic mastitis (lobular hyperplasia) there is a finely granular induration, often confined to one wedge-like section of the breast, which may be multiple, and which is only vaguely palpable to the palm of the hand. It is not adherent to the skin or deep fascia, the nipple is not retracted, and the axillary glands when enlarged are small and tender.

"In fibro-adenoma the mass is single or multiple, sharply circumscribed, not attached to the skin or deep fascia, and the axillary glands are not enlarged.

"In carcinoma the lump is single, hard, not confined to one sector, neither painful nor tender, palpable to the palm of the hand; the nipple may be retracted, and the axillary glands considerably enlarged but not tender.

"On section the mass in chronic mastitis is indefinite in outline, tough and indiarubbery in consistency, of a yellow-grey color, and cysts of varying size are common. The fibro-adenoma is circumscribed, encapsulated, and easily shelled out, firm, white in color, homogenous or finely granular, and when incised it feels hard, but neither tough nor gritty. Carcinoma is irregular in shape, indefinite in outline, firmly adherent to the surrounding fat, densely hard, grey in color but not homogenous looking, cuts with a peculiar gritty feel, and 'cancer juice' may be scraped from the surface.

"Carcinoma may arise in a breast already the seat of lobular hyperplasia, so that the two conditions frequently co-exist. It may also be associated with fibro-adenoma, but does not arise from conversion of that tumor into a malignant growth."

This volume covers practically every organ and system which comes under the surgeon's domain. The sections are well illustrated with carefully chosen photographs and microphotographs which makes for added clarity on the subject under discussion. Every surgeon will find that this volume will broaden his pathologic horizon.

What Other Editors Think

Editorial Evaluations of Current Contributions To Medical Progress

POTASSIUM IN DIARRHEA

THE poor results so often obtained hitherto in the treatment of infantile diarrhea have been due to a false assumption, in the view of Darrow and of Govan and Darrow, that the potassium ion is retained in the cell while the sodium and chloride ions are excluded. These authors suggest that many therapeutic failures have resulted from the belief that it was necessary to restore the normal electrolyte balance only in the extracellular fluids.

Recent work has shown that certain cell membranes are permeable to potassium. Darrow and Govan attempt by somewhat complicated calculations to show exactly how much of the body potassium may be lost in cases of dehydration, quite apart from cell destruction. They conclude that in the most severe forms of infantile diarrhea as much as one-quarter of the estimated body potassium may be lost. With this in mind they have supplemented the usual glucose with potassium chloride. They claim that after giving the electrolyte mixture subcutaneously or intravenously for twenty-four hours they are able subsequently in most cases to give it by the oral route. All severely ill patients received blood or plasma transfusion.

The reluctance to administer potassium has been largely due to a well-founded distrust of giving an ion that is known at times to have toxic effects. Darrow had no deaths due to potassium toxemia, but one patient had heart block, and recovered; there were 5 instances of intense erythema in 50 patients. In 53 cases treated by the old method by the authors there were 17 deaths; in another series of 50 receiving potassium chloride in addition there were only 3 fatal cases. The groups were unfortunately not collateral and were admitted over different periods of the year, so that the observations were not strictly controlled. Nevertheless this line of therapy would be worth serious consideration.

British Medical Journal, No. 4503, p. 573.

BIOPSY OF THE LIVER BY NEEDLE PUNCTURE

THERE have recently appeared articles on a needling type of biopsy of the liver in which tiny sausage-shaped bits of tissue are removed for section and histologic study. Obviously, if such a method is sufficiently safe, it can be very helpful in making a diagnosis in cases of a large liver of unknown origin, in following the later course of cases of infectious hepatitis, and in demonstrating the existence of primary carcinoma of the liver.

Today, even with all the many advances in the technic for diagnosing disease in the liver, there still remain cases in which it is impossible to say just what the lesion is. Sometimes, then, recourse is had to surgery and if the surgeon finds only a badly diseased liver and no obstruction of the common duct, he wishes devoutly that he could have spared the patient a largely futile and decidedly dangerous operation. Certainly any procedure that would lessen the need for these unfortunate operations would be welcomed by the gastroenterologist.

On searching the literature, it was found that the making of a biopsy of the liver with anesthesia or incision in the abdominal wall is not a new procedure. Before the dawn of this century it grew out of the well-known technic of needling the liver in a search for amebic abscesses, which was being used as early as 1835.

The big advance in technic appears to have been made in 1907 by Schupfer, who was a professor of medicine in Florence. He devised a needle with a sharp cutting edge all around the slightly flaring lower end. This knife-like edge cut a little core of tissue instead of tearing out pieces. The needle was about 8 cm. long with an outside diameter from 1.8 to 2 mm., and an inside diameter of from 1.4 to 1.5 mm.

In recent years most workers have employed a needle somewhat larger than was used at first. The

size of the needle is a compromise between one large enough to insure removal of a piece of liver adequate for sectioning and one small enough so that the danger of hemorrhage will be slight. Probably the two needles most often used now are the Silverman and the Roth-Turkel.

One of these instruments consists of an outer cannula with a sharp cutting edge, and an inner longer hollow needle split down the center with V-shaped cutting points. This inner needle, on introduction, tends to grasp a bit of liver tissue so that it can the more surely be removed. It seems best to insert the needle in front, pointing it upward into the liver substance. The patient must hold his breath, and it may help to immobilize the liver with the hand, granting that it can be felt through the abdominal wall. The needle is rotated when the physician begins to withdraw it.

Some writers have suggested performing the puncture while watching with a peritoneoscope passed through the abdominal wall nearby. Care must be taken not to push the needle into the liver so far that a large vessel can be punctured.

Dr. F. W. Hoffbauer writes that one of his colleagues, Dr. Varco, has found that with local anesthesia he can make a biopsy of the liver through a 6 cm. midline incision. Through this a piece of liver tissue can be removed and hemorrhage can be controlled by sutures. Hoffbauer believes that the amount of discomfort produced by this operation is about the same as that produced by peritoneoscopy.

In view of the many favorable results published, it would seem that the needle biopsy of the liver should be used more often. It certainly should be safer than is the type of surgical exploration now so often resorted to.

George E. Brown, Jr., M.D., and Walter C. Alvarez, M.D., Gastroenterology, Vol. 8, No. 5, May 1947.

ALL BUT THEE AND ME

THE implications of an old story are becoming confused. It related how everybody was found a bit touched mentally, "all but thee and me," with the afterthought that "thee" might not be altogether free from taint. In these days when the smattering of the terminology of psychology and psychiatry is common property the "me" of the story is turning the eye of suspicion upon himself along with the rest of the world.

The president and psychiatrist-in-chief of the Neuro-Psychiatric Institute of the Hartford Retreat in his annual report to the Board of Directors gave voice to a number of observations that should have wider publicity than is furnished by his pamphlet.

The report carries the considered opinion that mental illness is being increased instead of decreased by the present-day emphasis on psychiatric disorders. It has become widely accepted that mental illness must be attacked like tuberculosis and cancer, through a national alertness to early psychiatric disorders. The supporters of such a program can have given little thought to the inherent differences between these two definite diseases of the flesh and the variety and degree of the disorders to which the mind is subject. Of the effect of overstimulated interest in mental disorders, Dr. Burlingame says:

"Throughout the country, hundreds of thousands of persons, satiated with a superficial knowledge of the psychological implications of life and literally preoccupied with psychiatric terminology, are beginning to interpret every trivial thought and feeling in psychological terms. Consequently people in all walks of life are being instilled with the belief that they need psychiatric attention to save their minds if not their souls."

This is to say that too many of us are interpreting our emotions and reactions in terms of mental abnormality. We are not only searching our own psyche for the stigmata of mental disorder but we are on the lookout for such in the behavior of our friends and associates. It was bad enough when we fancied our psychiatrist friends were looking us over for evidence of a break in our mentalities, but to be thus studied by our lay friends is much more disconcerting. Again to quote the report:

"Too many people seem to be so lost in the morass of psychological jargon and theories that they are seeing psychiatric disorders in perfectly normal emotional swings. The popular tendency is to concentrate on the psychiatric dangers in ordinary everyday living in terms of 'That is what is wrong with me. It is because of these psychologi-

cal factors that I am not happier, or more successful, or better liked and things are getting worse' and so on and on."

The time seems to have come when a campaign of assurances by the psychiatric profession is needed to combat the surge of apprehension and misunderstanding that has swept over our people. This will produce more salutary effects than any further incitement to witch-hunting, of which our country has had its fill.

It would seem that those who have taken upon themselves the campaign for mental health, so-called, have a great responsibility upon their shoulders. If their aim, the reduction in mental disorders, is to be accomplished, it must be by other means than psychiatric warnings and admonitions.

The most concrete suggestion toward the goal of mental health is that of *child guidance,* before which there should be *parent guidance.* The suggestion is made that there should be parent guidance centers in which the parents could be taught how to produce discipline and teach social responsibility to their offspring. If children are taught self-restraint and conformation to social laws there would be made a vast contribution toward a more sane and substantial population.

Military Surgeon, Vol. 101, p. 79; Colonel James M. Phalen, Secretary-Editor.

EPIDEMIC HEPATITIS

Infectious hepatitis and homologous serum jaundice are generally regarded as relatively mild diseases that are associated with a low mortality rate—about 0.2 per cent. Recovery is usually complete. Cases do occur, however, in which these infections are followed by a long-standing disability with a variety of symptoms referable to the liver or nervous system, or both.

Lucké described the pathological findings in the livers of 14 cases observed in the Army after apparent recovery from epidemic hepatitis. The livers had become available for examination as a result of fatal accidents or unrelated diseases from one to fourteen months after the attack of hepatitis. From the study of these livers, Lucké concluded that complete restoration of the hepatic parenchyma usually occurs in nonfatal cases of hepatitis. Regeneration is usually complete provided that the destruction is acute and the injury is not continued and provided also that the destructive changes involve only the hepatic cells and not the framework or vessels; all this generally holds true in epidemic hepatitis. Lucké could find no evidence of permanent damage to the hepatic parenchyma.

In Denmark another malignant form of hepatitis has been observed in recent years. In the cases that were observed there, death occurred several months after the onset of acute hepatitis. Reports of cases of this type are now available from hospitals in Copenhagen. The malignant hepatitis observed in Denmark has occurred predominantly in women over 45 years of age and has a fatality rate of about 50 per cent. The duration of illness is usually from four to nine months, but both more acute and more protracted cases have been observed. Clinically the cases are characterized by jaundice, recurrent attacks of pain associated with fever and evidence of portal obstruction—that is, edema and ascites. There is persistent evidence of impaired liver function. The pathological findings are largely limited to the liver, in which there is widespread destruction of liver tissue and, in the relatively chronic cases, replacement by connective tissue.

The etiology of this form of hepatitis remains obscure. On epidemiologic grounds it is believed that this type has a different cause from that of the usual cases of epidemic hepatitis and that it is different from homologous serum jaundice. Indeed, the possibility is considered that it may not even be an infectious disease, although no alternative causes have been suggested. Similarly, no effective therapy has been found other than the usual dietary and supportive regimes used in hepatitis.

The New England Journal of Medicine, Robert N. Nye, M.D., Managing Editor, Vol. 237, p. 35.

New Drugs

Information published in this department has been supplied by the manufacturers of the products described.

PENICILLIN VAGINAL SUPPOSITORIES SCHENLEY

PURPOSE: An active preparation for the topical administration of penicillin to the vagina and cervix.

COMPOSITION: Each suppository contains 100,000 units of penicillin calcium in a base consisting essentially of cocoa butter.

INDICATIONS FOR USE: In the treatment of the lower genital tract, e.g., vaginitis, caused by, or associated with, penicillin-sensitive organisms, exclusive of the gonococcus.

DOSAGE AND METHOD OF ADMINISTRATION: In the treatment of infections, 1 or 2 Penicillin Vaginal Suppositories Schenley should be inserted into the vaginal canal morning and night until the infection is controlled and eradicated or until maximum therapeutic effect has been obtained. For prophylactic use in surgical procedures, 2 Penicillin Vaginal Suppositories Schenley should be inserted into the vaginal canal the night before and the morning of operation. During the postoperative period, 1 suppository should be inserted into the vaginal canal morning and night until all danger of infection has passed.

CAUTIONS: In considering the use of other local agents in conjunction with Penicillin Vaginal Suppositories Schenley, it should be remembered that the antibacterial properties of penicillin are adversely affected by oxidizing agents, acids, alkalies, primary alcohols, and heavy metals.

HOW SUPPLIED: Boxes of 6 and boxes of 12 suppositories.

PRODUCER: Schenley Laboratories, Inc., New York, N. Y.

PENICILLIN G (POTASSIUM SALT), CRYSTALLINE, IN OIL AND WAX, 300,000 UNITS

PURPOSE: Antibiotic therapy.

DESCRIPTION: Sterile suspension of pure crystalline penicillin G (potassium salt) in peanut oil and beeswax containing 300,000 units of penicillin per cubic centimeter.

INDICATIONS FOR USE: Mantains effective blood levels of penicillin for approximately twentv-four hours. The oil and beeswax disappear from the injection site in about a month without causing any untoward cellular reaction. For use in the treatment of gonococcic, pneumococcic, staphylococcic, and streptococcic infections.

DOSAGE: Intramuscular or subcutaneous injection in a daily dose of 3,000 units per pound of body weight up to 100 pounds. Between 100 and 200 pounds: 300,000 units. Over 200 pounds: 600,000 units.

HOW SUPPLIED: Sterile, disposable, 1 cc. cartridge syringe..$4.12.

PRODUCER: The Upjohn Company, Kalamazoo 99, Mich.

PENICILLIN G, CRYSTALLINE (SODIUM SALT), BUFFERED, 100,000 UNITS

PURPOSE: Oral penicillin therapy.

COMPOSITION: Each tablet contains:

Penicillin G Crystalline (sodium salt)..100,000 units.

Calcium carbonate..4 grains.

INDICATIONS FOR USE: In treatment of infections caused by penicillin-susceptible organisms.

DOSAGE: One tablet every three hours.

HOW SUPPLIED: Desiccating vial of 12 tablets..$4.61.

PRODUCER: The Upjohn Company, Kalamazoo 99, Mich.

ENFORBEC

PURPOSE: To provide therapeutic doses of the water-soluble vitamins.

COMPOSITION: Each Enforbec tablet contains:

Thiamine HCl	10 mg.	Pyridoxine HCl	0.1 mg.
Riboflavin	5 mg.	Calcium pantothenate	10 mg.
Niacinamide	100 mg.	Ascorbic acid	100 mg.

Together with natural B complex as derived from liver B fraction and yeast.

DESCRIPTION: Enforbec is presented in a hexagonal coated tablet of pleasing flavor and odor.

DOSAGE: Usual dose is 1 to 3 tablets daily, as determined by the physician.

HOW SUPPLIED: In bottles of 100.

PRICE: $7.50 per bottle, full retail list.

PRODUCER: Harrower Laboratory, Inc., Glendale, Cal.

'DELCOS' PROTEIN—CARBOHYDRATE GRANULES

PURPOSE: For treatment of protein nutritional deficiency states.

COMPOSITION: Each 100 gm. contains protein (derived from milk) 50 gm., and carbohydrate (derived from sugar and milk sugar) 30 gm.

INDICATIONS FOR USE: In treatment of protein nutritional deficiency states such as may occur in surgery, severe burns, infections, convalescence and chronic disease, peptic ulcer, ulcerative colitis, pregnancy and lactation, nutritional edema, and geriatrics. Delcos' Granules may be added to milk, pudding, junket, gelatin desserts, cereals, fruit juices, fresh fruits, ground meats, salads, waffle batter, ice cream or similar dishes.

HOW SUPPLIED: In 1-lb. and 5-lb. packages.

PRODUCER: Sharp & Dohme, Inc., Philadelphia, Pa.

NEOCURTASAL

PURPOSE: For use in a saltless diet.

DESCRIPTION: Odorless, white, crystalline, somewhat hygroscopic powder, consisting of potassium chloride, ammonium chloride, potassium formate, calcium formate, magnesium citrate, and starch.

INDICATIONS FOR USE: As a salt substitute in all diets in which sodium intake is restricted; e.g., cardiac and renal disease, hypertension, arteriosclerosis, certain complications of pregnancy, insomnia and other tension states, some types of dermatitis, and for the Gerson diet in tuberculosis. It should be used in approximately the same amount as table salt. It may be added to dough before baking and other foods before cooking, except when prolonged boiling is necessary. Then it should be added when the food is ready to be served.

DOSAGE: Used for seasoning in approximately the same amounts as table salt. If table salt is not completely withdrawn from the diet, it may be mixed with Neocurtasal in any desired proportions.

HOW SUPPLIED: Salt shaker of 2 oz. and bottle of 8 oz.

PRODUCER: Winthrop Chemical Company, Inc., New York, N. Y.

SOLUTION TUBOCURARINE CHLORIDE

PURPOSE: To provide muscular relaxation by an interruption of nervous impulses to skeletal muscle at the myoneural junction.

COMPOSITION: A sterile isotonic aqueous solution of d-tubocurarine chloride crystals standardized by weight to contain the equivalent of 2.7 mg. of the anhydrous salt or 3 mg. of the crystalline pentahydrate in 1 cc. of solution. When assayed by the rabbit "Head-Drop Crossover" test, each cc. is equivalent to 20 units of Intocostrin. (Intocostrin—Squibb purified extract of Curare in aqueous diluent).

DESCRIPTION: A clear, colorless solution.

INDICATIONS FOR USE: To secure muscular relaxation in surgery; to soften convulsions in shock treatment of mental disease; for the relief of spastic and athetoid states; for its relaxing effect in carrying out certain manipulative procedures; as a diagnostic agent in myasthenia gravis.

DOSAGE AND ADMINISTRATION: In anesthesia: 40-60 units (20 units for ether anesthesia) by intravenous route, followed by repeated smaller injections, if necessary. In shock to soften convulsions: ½ unit per pound of body weight, administered intravenously. Total initial dose 20 units less than computed on this basis as caution is advisable until individual reaction to drug is determined. In spastic and athetoid states: intramuscularly ½ to ¾ unit per pound of body weight administered once, twice or thrice a day. In manipulative procedures: as in shock therapy or somewhat less. In diagnosis of myasthenia gravis: 1/15 to 1/5 of average adult shock therapy dose, intravenously.

Administered as a uniformly sustained injection over a period of from 30 to 60 seconds, if given by intravenous route. The intramuscular route may be used in patients with difficult veins but curarization develops much more slowly.

CAUTIONS: Overdosage results in temporary respiratory paralysis and should be avoided. In the event of accidental overdosage, prostigmine methyl sulfate is an effective antidote. 1 to 2 cc. of a 1:2000 dilution may be given intravenously and repeated if necessary. If the overdosage of curare is great, a large single dose of prostigmine may be dangerous because it may produce central nervous system depression; moreover, large doses of prostigmine and of curare may cause vasodepression. If respiratory paralysis should occur, prompt and effective artificial respiration with an assured free airway may be expected to carry patient through period of depression. Solution Tubocurarine Chloride is contraindicated in myasthenia gravis; although it serves as a diagnostic agent when administered in very *small* amounts (see dosage).

HOW SUPPLIED: A sterile isotonic aqueous solution supplied in 10 cc. rubber-capped vials, each cc. containing an amount of crystalline alkaloid equivalent to 20 units of Intocostrin.

LIST PRICE: 10 cc. vial, $2.92.

PRODUCER: E. R. Squibb & Sons, New York, N. Y.

POSTGRADUATE COURSES

Complete information may be obtained by writing directly to the Institutions offering the courses.

Selected Postgraduate Continuation Courses for Practicing Physicians—September 1, 1947 to January 15, 1948

Institution	*Title of Course*	*Schedule of Course*	*Registration Fee and/or Tuition*
ALLERGY			
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago	Allergy	1 month, full time, 1st of every month	$200.00
	Personal Course in Allergy	6 months, 1st of month when plans are available	125.00
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32 At: Roosevelt Hospital	Recent Advances in Allergy	1 week, full time, Nov. 10-15, 1947	40.00
New York Postgraduate Medical School, 303 E. 20th St., New York 3	Allergy	8 weeks, full time, Nov. 5-25, 1947	200.00
American College of Allergists, 401 LaSalle Med. Bldg., Minneapolis At: Cincinnati, Ohio	Intensive Fall Graduate Instructional Course in Allergy	1 week, Nov. 3-8, 1947	100.00
ANESTHESIOLOGY			
University of Illinois College of Medicine, 1853 W. Polk St., Chicago	Bronchoscopy for Anesthesiologists	1 week, full time, November 3-8, 1947	100.00
University of Illinois College of Medicine, 912 S. Wood St., Chicago	Bronchoesophagology (Given in conjunction with Anesthesia Dept. Open to Anesthetists only)[1]	1 week, full time, November 3-8, 1947	100.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York	Clinical Anesthesiology	6 months, full time, arranged	200.00
New York Polyclinic Medical School and Hospital, 341-353 W. 50th St., New York	Anesthesia	3 months, Oct. 1, 1947, Jan. 2, 1948	300.00
New York Postgraduate Medical School, 303 E. 20th St., New York 3	Anesthesia	Arranged, full time Arranged, starting after Sept. 15, 1947	125.00
New York University College of Medicine, 477 First Ave., New York 16 At: Bellevue Hospital	Anesthesiology	24 weeks, full time, Fall 1947	400.00
	Regional Anesthesia	2 weeks, full time, Sept. 2-13, 1947	150.00
	Regional Anesthesia	2 weeks, full time, Jan. 5-24, 1948	150.00
Duke University School of Medicine, Durham, North Carolina	Anesthesia	3 or 6 weeks, full time, arranged	per mo. 50.00
ARTHRITIS			
New York Postgraduate Medical School, 303 E. 20th St., New York 3	Arthritis and Allied Rheumatic Disorders	5 days, full time, Nov. 10-14, 1947	55.00
CARDIOVASCULAR DISEASES			
University of Southern California School of Medicine, 1200 N. State St., Los Angeles 33 At: Los Angeles County Hospital	Cardiology and Vascular Disease (Course 732)	12 months, full time, Sept. 15, 1947—Sept. 15, 1948	1,000.00
Columbia University College of Physicians and Surgeons, 630 W. 169th St., New York At: Bellevue Hospital	Cardio-pulmonary Physiology in Clinical Medicine (PM82)	2 weeks, full time, Oct. 20-31, 1947	60.00

See p. 158 for references.

POSTGRADUATE COURSES

Selected Postgraduate Continuation Courses for Practicing Physicians—September 1, 1947 to January 15, 1948

CHEST DISEASES

Institution	*Title of Course*	*Schedule of Course*	*Registration Fee and/or Tuition*
California Tuberculosis and Health Assn. 45 2nd St., San Francisco At: Medical Schools in Los Angeles	Tuberculosis	3 days to 2 weeks, arranged	None
At: Various conveniently located places	Postgraduate — Disease of the Chest	Individually arranged	None
American College of Chest Physicians, 500 N. Dearborn St., Chicago	Diseases of the Chest	5½ days, Sept. 15-20, 1947	50.00
University of Kansas School of Medicine, 39th St. and Rainbow Blvd., Kansas City, Kans.	Tuberculosis	4 days, Oct. 20-23, 1947	20.00
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32 At: Bellevue Hospital	Tuberculosis and Diseases of the Chest	2 weeks, full time, Oct. 6-18, 1947	50.00
	Cardiopulmonary Physiology in Clinical Medicine (PM82)	2 weeks, full time, Oct. 20-31, 1947	60.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York	Pulmonary Tuberculosis	1 month, arranged	150.00
Trudeau School of Tuberculosis, Saranac Lake, New York	Refresher Course in Tuberculosis	4 weeks, Sept. 8, 1947	100.00
Medical Society of the State of New York, 428 Greenwood Place, Syracuse At: State Dept. of Health Tuberculosis Hospitals in various cities in the State of New York	Course in Instruction in Pulmonary Disease and Tuberculosis	3-5 months, arranged	Stipend[2]

DERMATOLOGY AND SYPHILOLOGY

University of Southern California School of Medicine, 1200 N. State St., Los Angeles 33 At: Los Angeles County Hospital	Dermatology and Syphilology (Course 760)	11 months full time, Oct. 6, 1947	1,000.00
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago	2 Weeks' Clinical Course in Dermatology	2 weeks, every 2 weeks	75.00
	Course in Dermatology	12 months, when openings are available	1,000.00
	2 Weeks' Course in Dermatology (Formal)	2 weeks full time, Oct. 20, 1947	100.00
University of Minnesota Medical School, Minneapolis 14 At: Center for Continuation Study	Pathology of Diseases of the Skin	4-6 weeks, full time, Fall 1947	Arranged
New York Postgraduate Medical School, 303 E. 20th St., New York 3	Dermatology and Syphilology for Pediatricians (Restricted to Pediatricians)[1]	5 days, full time, Sept. 8-12, 1947	75.00
	Seminar in Practical Dermatology and Syphilology	5 days, full time, Sept. 8-12, 1947	55.00
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4	Dermatology-Syphilology	8 months, full time, Oct. 1947 to May 1948	800.00

POSTGRADUATE COURSES

Selected Postgraduate Continuation Courses for Practicing Physicians—September 1, 1947 to January 15, 1948

DIABETES

Institution	*Title of Course*	*Schedule of Course*	*Registration Fee and/or Tuition*
New England Deaconess Hospital, 15 Deaconess Road, Boston 15	Diabetes in Relation to General Medicine	5 days, full time, Oct. 6-11, 1947	20.00
New York Postgraduate Medical School, 303 E. 20th St., New York 3	Diabetes Mellitus, Nephritis and Hypertension	5 days, full time, Oct. 27-31, 1947	55.00

ELECTROCARDIOGRAPHY

University of Michigan Medical School, 1313 E. Ann St., Ann Arbor	Electrocardiographic Diagnosis	1 week, full time, Nov. 10-15, 1947	50.00
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32	Intensive Course in Elementary Electrocardiography	1 week, full time, Sept. 29-Oct. 4, 1947	60.00
New York Postgraduate Medical School, 303 E. 20th St., New York 3	Electrocardiography	5 days, full time, Oct. 6-10, 1947	55.00

ELECTROENCEPHALOGRAPHY

University of Illinois College of Medicine, 912 S. Wood St., Chicago	Electroencephalography for Doctors	2 months, full time, arranged—probably will be started Sept. 15, 1947	200.00
University of Texas Medical Branch, 912 Avenue B, Galveston	Electroencephalography	Arranged	Not Given

ENDOCRINOLOGY

New York Academy of Medicine, 2 E. 103rd St., New York 29 At: Academy and Local Hospitals	Disorders of Metabolism and the Endocrine Glands	2 weeks, full time, October 6-17, 1947	5.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York	Endocrinology	3 weeks, full time, Dec. 1947	150.00

ENDOSCOPY

American Broncho-Esophagological Assn., 700 N. Michigan Ave., Chicago	Broncho-Esophagology and Laryngeal Surgery	2 weeks, full time, Sept. 15-28, 1947	150.00
University of Illinois College of Medicine, 912 S. Wood St., Chicago	Special Course in Broncho-Esophagology	2 weeks, full time, Nov. 1947 (Tentative)	150.00
New York University College of Medicine, 477 First Ave., New York 16 At: New York Eye and Ear Infirmary	Broncho-Esophagology[1]	12 days, full time, Nov. 1947	250.00
Temple University School of Medicine, 3400 N. Broad St., Philadelphia At: Temple University Hospital	Broncho-Esophagology	2 weeks, full time, arranged	250.00
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4 At: Affiliated Institutions	Broncho-Esophagology, Gastroscopy and Laryngeal Surgery	2 weeks, full time, arranged	250.00

FRACTURES

New York Medical College, Flower and Fifth Avenue Hospitals, 20 E. 106th St., New York	Fractures and Allied Trauma	1 month, full time, Fall 1947	150.00

POSTGRADUATE COURSES

Selected Postgraduate Continuation Courses for Practicing Physicians—September 1, 1947 to January 15, 1948

GASTROENTEROLOGY

Institution	*Title of Course*	*Schedule of Course*	*Registration Fee and/or Tuition*
University of Southern California, School of Medicine, 1200 N. State St., Los Angeles 33 At: Los Angeles County Hospital	Gastroenterology (Course 744)	12 months, full time, Sept. 15, 1947	1,000.00
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago	Personal Course in Gastroscopy and Gastroenterology	2 weeks, full time, Sept. 22, 1947	200.00
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32 At: Mount Sinai Hospital	Surgery of the Gastro-Intestinal Tract	4 weeks, full time, Oct. 20-Nov. 14, 1947	150.00
	Surgery of the Gastro-Intestinal Tract	4 weeks, full time, Jan. 5-30, 1948	150.00
New York Medical College, Flower and Fifth Avenue Hospitals, 20 E. 106th St., New York	Gastroenterology	3 weeks, full time, Dec. 1947	100.00
New York Polyclinic Medical School and Hospital, 341-353 W. 50th St., New York	Clinical Gastroenterology	6 weeks, Oct. 1, 1947-Jan. 2, 1948	50.00
New York Postgraduate Medical School, 303 E. 20th St., New York 3	Gastroenterology	10 days, full time, Oct. 13-24, 1947	100.00
University of Oregon Medical School, Portland	Gastro-Intestinal Diseases	5 days, full time, Dec. 1-5, 1947	50.00
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4 At: Graduate Hospital	Clinical Gastroenterology[1]	16 weeks, full time, arranged	400.00

HEMATOLOGY

University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4 At: Bryn Mawr Hospital	Clinical and Laboratory Hematology	6 weeks, full time, Oct. 1, 1947	200.00
	Clinical and Laboratory Hematology	6 weeks, full time, Dec. 1, 1947	200.00

MALIGNANT DISEASES

University of Kansas School of Medicine, 39th St. and Rainbow Blvd., Kansas City 3	Radiology and Cancer	3 days, Jan. 19-21, 1948	15.00
University of Oregon Medical School, 3181 S.W. Marquam Hill Road, Portland 1	Diagnosis and Treatment of Malignant Growths	4 days, full time, Sept. 22-25, 1947	25.00
Tennessee State Medical Association, Postgraduate Committee, 4 University Center Bldg., Memphis At: County seat towns and centers	Cancer Instruction, with Emphasis Upon Diagnosis. For the General Medical Profession	10 weeks, 1947-1948	10.00

MEDICINE, GENERAL

Medical College of Alabama, 620 S. 20th St., Birmingham 5 At: Birmingham	Medicine, Surgery, Gynecology and Obstetrics	3 days, full time, Oct. 1947 (Tentative)	None
At: Mobile	Medicine, Surgery, Gynecology and Obstetrics	3 days, full time, Oct. 1947 (Tentative)	None
California Medical Association, 450 Sutter St., San Francisco At: Leading cities in California	Postgraduate Program	All year	None

POSTGRADUATE COURSES

Selected Postgraduate Continuation Courses for Practicing Physicians—September 1, 1947 to January 15, 1948

MEDICINE—*Continued*

Institution	*Title of Course*	*Schedule of Course*	*Registration Fee and/or Tuition*
University of Southern California School of Medicine, 1200 N. State St., Los Angeles 33	Internal Medicine (Course 730)	12 weeks, full time, Sept. 15, 1948	250.00
At: Los Angeles County Hospital	Internal Medicine (Course 730)	12 weeks, full time, Jan. 5, 1948	250.00
	Internal Medicine (Course 731)	9 months, full time, Jan. 5, 1948	750.00
Connecticut State Medical Society, 258 Church St., New Haven, Conn., and Yale University School of Medicine, 333 Cedar St., New Haven, Conn.	Connecticut Clinical Congress	3 days, full time, Sept. 1947	members 3.00 non-members 5.00
Emory University School of Medicine, 50 Armstrong St., Atlanta, Ga.	General Internal Medicine	Arranged, full time	per qtr. 125.00 per week 12.00
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago	2 Weeks' Course in Internal Medicine	2 weeks, full time, Oct. 6, 1947	75.00
Mississippi Valley Medical Society, Quincy, Illinois	Practical Papers for General Practitioners	3 days, full time, Oct. 1-3, 1947	None
At: Burlington, Iowa			
State University of Iowa School of Medicine, Iowa City	Medicine General	5 days, full time, Sept. 22-26, 1947	None
At: Iowa City	Medicine General	5 days, full time, Oct. 27-31, 1947	None
	Medicine General	5 days, full time, Nov. 24-28, 1947	None
	Informal Refresher Course	Arranged, full time	None
Kentucky State Medical Association, 620 S. Third St., Louisville 2, Ky.	Refresher Course in Medicine	6 weeks, continuously	None
At: University of Louisville School of Medicine			
Massachusetts Medical Society, 8 The Fenway, Boston	New England Postgraduate Assembly	3 days, Oct. 29-31, 1947	regis. 3.00
At: Copley Plaza Hotel			
At: Throughout Mass.	Postgraduate Extension Course	8 months, Oct. 1947-May 1948	None
University of Michigan Medical School, Wayne University College of Medicine, Michigan Dept. of Health and Michigan State Medical Society, Ann Arbor	Practitioners' Course	2 days, Fall 1947	None
At: Battle Creek—Kalamazoo	Practitioners' Course	2 days, Fall 1947	None
At: Bay City	Practitioners' Course	2 days, Fall 1947	None
University of Michigan Medical School, Wayne University College of Medicine, Michigan Dept. of Health, Michigan State Medical Society			
At: Flint	Practitioners' Course	2 days, Fall 1947	None
At: Grand Rapids	Practitioners' Course	2 days, Fall 1947	None
At: Houghton	Practitioners' Course	2 days, Fall 1947	None
At: Ironwood	Practitioners' Course	2 days, Fall 1947	None
At: Jackson—Lansing	Practitioners' Course	2 days, Fall 1947	None
At: Marquette	Practitioners' Course	2 days, Fall 1947	None
At: Powers	Practitioners' Course	2 days, Fall 1947	None
At: Saginaw	Practitioners' Course	2 days, Fall 1947	None
At: Traverse City	Practitioners' Course	2 days, Fall 1947	None
At: Upper Peninsula	Practitioners' Course	2 days, Fall 1947	None

POSTGRADUATE COURSES

Selected Postgraduate Continuation Courses for Practicing Physicians—September 1, 1947 to January 15, 1948

MEDICINE—*Continued*

Institution	*Title of Course*	*Schedule of Course*	*Registration Fee and/or Tuition*
American Congress of Physical Medicine, 30 N. Michigan Ave., Chicago 2 At: Radisson Hotel, Minneapolis	Instruction Seminar	4 days, Sept. 2-5, 1947	1 lecture 2.00 10 lectures 15.00
Kansas City Southwest Clinical Soc., 630 Shukert Bldg., Kansas City, Mo.	Annual Fall Clinical Conference	4 days, full time, Oct. 6-9, 1947	15.00
Interstate Postgraduate Medical Assn., 16 N. Carroll St., Madison, Wis.	International Medical Assembly—A Postgraduate School	4 days, full time, Oct. 14-17, 1947	regis. 5.00
Omaha Mid-West Clinical Society, Omaha, Neb. At: Hotel Paxton	Fifteenth Annual Assembly	5 days, Oct. 27-31, 1947	regis. 5.00
University of Nebraska College of Medicine, 42nd St. & Dewey Ave., Omaha	General Refresher Course	44 hours per week, Sept., Oct., Nov., Dec., 1947	25.00
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32 At: Mount Sinai Hospital	Symposium of Internal Medicine	8 weeks, full time, Oct. 6-Dec. 6, 1947	350.00
American College of Surgeons, 40 E. Erie St., Chicago At: New York	Thirty-Third Clinical Congress	5 days, Sept. 8-12, 1947	5.00[4] Non-members 10.00
Cornell University Medical College, 1300 York Ave., New York 21 At: Bellevue Hospital	Graduate Course in Internal Medicine	6 months, full time continuously, 1st of each month	6 mo. 300.00 2 wks. 50.00
New York Polyclinic Medical School and Hospital, 341-353 W. 50th St., New York	Course for General Practitioners Course for General Practitioners	6 weeks, arranged 3 months, arranged	100.00[3] 200.00[3]
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York	Internal Medicine	1 month, full time, monthly	150.00
New York Postgraduate Medical School, 303 E. 20th St., New York 3	Review of Internal Medicine	13 weeks, full time, Sept. 23-Dec. 13, 1947	400.00
	Seminar in Internal Medicine	2 months, full time, Jan. 5-Feb. 27, 1947	12 weeks 150.00 8 weeks 100.00 4 weeks 50.00
New York University College of Medicine, 477 First Ave., New York 16 At: Lenox Hill Hospital	General Review for General Practitioners	8 weeks, full time, Fall 1947	Vets. 125.00 non-Vets. 150.00
Duke University School of Medicine, Durham, N. C.	General Medicine	1-2 weeks or longer, full time, arranged	per mo. 50.00
	Medicine	3 months or longer, full time, arranged	per mo. 50.00
American College of Surgeons, 40 E. Erie St., Chicago At: Cleveland Public Auditorium, Cleveland, Ohio	Thirty-Second Clinical Congress	5 days, December, 16-20, 1947	Fellows None Non-members 10.00

POSTGRADUATE COURSES

Selected Postgraduate Continuation Courses for Practicing Physicians—September 1, 1947 to January 15, 1948

MEDICINE—*Continued*

Institution	*Title of Course*	*Schedule of Course*	*Registration Fee and/or Tuition*
Oklahoma City Clinical Society, 512 Medical Arts Bldg., Oklahoma City At: Biltmore Hotel	Oklahoma City Clinical Society Annual Fall Clinical Conference	4 days, Oct. 27-30, 1947	15.00[5]
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4 At: Graduate Hospital	Segmental Neuralgias, Relief by Regional Anesthesias	3 weeks full time, Oct. 1947-May 1948	monthly 200.00
Piedmont Postgraduate Clinical Assembly, 209 N. Main St., Anderson, S.C.	Piedmont Postgraduate Clinical Assembly	1 day (including night) Sept. 15, 1947	15.00
Alumni Association, Medical College of the State of South Carolina, 16 Lucas St., Charleston	Alumni Postgraduate Seminar	3 days, full time, Nov. 4-6, 1947	15.00
Vanderbilt University School of Medicine, Nashville 4, Tennessee	Medicine	1-3 months, Oct. 1947	3 mos. 166.66
University of Vermont College of Medicine, Pearl St., College Park, Burlington	General Practice: Internal Medicine: Surgery	1-9 months, 1st of any month to Jan. 1948	per yr. 500.00 or pro rated
Washington State Medical Association, Seattle	Internal Medicine	4 weeks, Sept. 1-27, 1947	Not given
University of Wisconsin Medical School, 418 N. Randall St., Madison At: Wisconsin General Hospital	Course for Specialists in Internal Medicine[1]	2-6 months, arranged	per mo. 100.00
	Observation Course in Medical and Clinical Subjects	1-5 months, arranged	per mo. 100.00

NEUROLOGY AND PSYCHIATRY

University of California Medical School, San Francisco 22	Postgraduate Course in Psychiatry	12 weeks, full time, Sept. 8-Nov. 28, 1947	200.00
	Psychiatry and Neurology	3 months, Sept. 1947	200.00
American College of Physicians, 4200 Pine St., Philadelphia At: Colorado Psychopathic Hospital, Denver	Psychosomatic Medicine	2 weeks, Sept. 15-27, 1947	Not given
Catholic University of America Dept. of Psychology and Psychiatry, Washington, D. C. At: St. Elizabeth's Hospital	Psychiatric Conferences	2 semesters, Sept. 1947	per yr. 20.00
	Group Psychotherapy	2 semesters, Sept. 1947	per yr. 20.00
	Individual Psychotherapy	2 semesters, Sept. 1947	per yr. 20.00
Catholic University of America Dept. of Psychology and Psychiatry, Washington, D. C.	Psychiatry-Case Seminar in Psychotherapy	2 semesters, Sept. 1947	per sem. 20.00
	Introduction to Psychiatry	1 semester, Sept. 1947	per sem. 10.00
	Clinical Psychiatry	2 semesters, Sept. 1947	per sem. 20.00
	Psychopathology	2 semesters, Sept. 1947	per sem. 10.00
	Neurology, Neuropathology and Neuroroentgenology	2 semesters, Sept. 1947	per sem. 20.00
	Seminar in Clinical Psychology and Psychotherapy	1 semester, Sept. 1947	20.00

NEUROLOGY AND PSYCHIATRY—*Continued*

Institution	*Title of Course*	*Schedule of Course*	*Registration Fee and/or Tuition*
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32 At: Columbia Presbyterian Medical Center	Symposium on Neurology and Psychiatry	9 weeks, full time, October 6-Dec. 12, 1947	250.00
	Advanced Neurology	13 weeks, full time Jan. 5-April 2, 1948	150.00
	Advanced Neurology	13 weeks, full time Oct. 6-Dec. 30, 1947	150.00
	Clinical Electroencephalography and Electromyography	3 months, full time, between Oct. 1, 1947 and Mar. 31, 1948	150.00
At: Mount Sinai Hospital	Recent Advance in Neurology and Psychiatry	5 days, full time, Dec. 8-12, 1947	60.00
New York Medical College, Flower and Fifth Avenue Hospitals, 20 E. 106th St., New York	Neurology	1 month, full time arranged	200.00
	3 Year Comprehensive Course in Psychoanalysis	3 years Oct. 1947	30.00
New York State Department of Health, 76 State St., Albany 7 At: School for Corrective Motor Education, East Hampton, L. I.	Special Phases in Diagnosis, Evaluation, Treatment and Training of Cerebral Palsy Patients	Minimum 2 weeks, arranged	None[7]
At: Neurological Institute, New York	Special Phases in Diagnosis Evaluation, Treatment and Training of Cerebral Palsy Patients	Minimum 2 weeks, arranged	None[7]
At: Neuro-Psychologic Rehabilitation Institute, Philadelphia, Pa.	Special Phases in Diagnosis Evaluation, Treatment and Training of Cerebral Palsy Patients	Minimum 2 weeks, arranged	None[7]
New York Postgraduate Medical School, 303 E. 20th St., New York 3	Neurological and Psychiatric Diagnosis and Treatment in General Practice	2 weeks, full time, Dec. 8-20, 1947	100.00
New York University College of Medicine, 477 First Ave., New York 16 At: Bellevue Hospital	Psychiatry and Neurology	8 weeks, full time, Sept. 15, 1947	250.00
Duke University School of Medicine, Durham, N. C.	Neuropsychiatry	3 months or longer, full time, arranged	per mo. 50.00
	Neurosurgery	3 months or longer, full time, arranged	per mo. 50.00
University of Pennsylvania Graduate School of Medicine, 237 Medical Laboratories, Philadelphia 4 At: Affiliated Institutions	Neurology, Psychiatry (Basic Studies)	8 months, full time, Oct. 1947-May 1948	800.00
	Clinicobiologic Neurology and Psychiatry	10 weeks, full time	300.00

NEUROSURGERY

University of Wisconsin Medical School, 418 N. Randall St., Madison	Neurosurgery for Specialists[1]	2-6 months, arranged	per mo. 100.00

OBSTETRICS AND GYNECOLOGY

Alabama State Health Dept. and Jefferson County Health Dept., Birmingham At: Slossfield Maternity Center	Refresher Course in Obstetrics and Gynecology	3 days, September 1947	15.00
	Institute of Negro Physicians (Obstetrics)	3 days, full time, Sept. 1947	15.00
University of Southern California School of Medicine, 1200 N. State St., Los Angeles 33 At: Los Angeles County Hospital	Obstetrics and Gynecology (Course 753)	2 weeks, full time, Oct. 1947	100.00

OBSTETRICS AND GYNECOLOGY—*Continued*

Institution	*Title of Course*	*Schedule of Course*	*Registration Fee and/or Tuition*
University of California Medical School, San Francisco 22 At: University of California Medical Center	Obstetrics and Gynecology	5 days, full time, Sept. 1-5, 1947	35.00
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago	Obstetrics	2 weeks, full time, Sept. 8, 1947	150.00
	Operative and Office Gynecology	2 weeks, full time, Sept. 22, 1947	150.00
University of Maryland School of Medicine, Lombard and Greene St., Baltimore	Review of Gynecology, Oncology and Female Urology	10 weeks, full time, arranged	125.00
	Review Obstetrics and Gynecology	6 weeks, full time, arranged	150.00
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32	Observation Course in Obstetrics	1 month, full time, 1st of every month	100.00
New York Polyclinic Medical School and Hospital, 341-353 W. 50th St., New York	Combined Obstetrics and Gynecology	2 months, full time, Oct. 1, 1947	250.00
New York Postgraduate Medical School, 303 E. 20th St., New York 3	Seminar in Gynecology	2 months, full time, Oct. 1-Nov. 29, 1947	300.00
Duke University School of Medicine, Durham, N. C.	Obstetrics and Gynecology	3 months or longer, full time, arranged	per mo. 50.00
University of Oregon Med. School, 3181 S.W. Marquam Hill Road, Portland 1	Gynecology	5 days, full time, Oct. 27-31, 1947	50.00
Hahnemann Medical College and Hospital of Philadelphia, 235 N. 15th St., Philadelphia	Obstetrics	2 months, full time, July 1, 1947-Jan. 15, 1948	200.00

OPHTHALMOLOGY

University of Southern California School of Medicine, 1200 N. State St., Los Angeles At: Los Angeles County Hospital	Basic Ophthalmology (Course 852)	4 months, full time, Oct. 1947	600.00
University of California Medical School, San Francisco 22 At: Medical Center	Postgraduate Course in Ophthalmology	5 days, full time, Sept. 15-19, 1947	60.00
Children's Memorial Hospital, 707 Fullerton Ave., Chicago 14	Postgraduate conference in Neuromuscular Anomalies of the Eyes	1 week, second week in November, 1947	50.00
New York Postgraduate Medical School, 303 E. 20th St., New York 3	Anomalies of the Ocular Muscles (Restricted to Ophthalmologists)[1]	5 days, full time, Oct. 27-31, 1947	75.00
	Differential Diagnosis with the Slit Lamp (Restricted to Ophthalmologists)	5 days, part time, Nov. 10-14, 1947	50.00
	Motor Anomalies of the Eye (Restricted to Ophthalmologists)[1]	6 days, full time, Oct. 20-25, 1947	100.00
New York Postgraduate Medical School, 303 E. 20th St., New York 3	Surgery of the Eye[1] (Restricted to Ophthalmologists)	6 days, full time, Nov. 3-8, 1947	100.00

OPHTHALMOLOGY—*Continued*

Institution	*Title of Course*	*Schedule of Course*	*Registration Fee and/or Tuition*
New York University, 477 First Ave., New York 16 At: New York Eye and Ear Infirmary	Allergy of the Eyes and Upper Respiratory Tract[1]	12 lectures and 12 clinic sessions, arranged	100.00
University of Rochester School of Medicine and Dentistry, Crittenden Blvd., Rochester, N. Y.	Ophthalmology	3½ days, full time, July 28-31, 1947	40.00
Duke University School of Medicine, Durham, N. C.	Ophthalmology	3 months or longer, full time, arranged	per mo. 50.00
Cleveland Clinic, Euclid Ave. at E. 93rd St., Cleveland 6	Diseases of Eye, Ear, Nose and Throat	3 days, first week in Dec. 1947	Not given
Virginia Society of Ophthalmology & Otolaryngology, University Station, Charlottesville At: Medical College of Virginia, Richmond	Postgraduate Course in Ophthalmology and Otolaryngology	4 days, Dec. 1947	full course 25.00 part 15.00

ORTHOPEDIC SURGERY

State University of Iowa School of Medicine, Iowa City	Orthopedic Surgery	10 months, full time, Sept. 1, 1947-July 1, 1948	300.00
New York Postgraduate Medical School, 303 E. 20th St., New York 3	Orthopedics in General Practice	6 days, full time, Nov. 3-8, 1947	60.00
	Seminar in Orthopedic Surgery[1] (Restricted to Surgeons)	10 days, full time, Jan. 5-16, 1947	125.00
Duke University School of Medicine, Durham, N. C.	Orthopedic Surgery	8 months or longer, full time, arranged	per mo. 50.00

OTOLARYNGOLOGY

Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York	Otolaryngology	3-6 months, full time, first day of any month	150.00
New York Postgraduate Medical School, 303 E. 20th St., New York 3	Symposium on Otolaryngology (Restricted to Otolaryngologists)[1]	2 weeks, full time, Nov. 10-22, 1947	150.00
Duke University School of Medicine, Durham, N. C.	Otolaryngology	3 months or longer, full time, arranged	per mo. 50.00
Virginia Society of Ophthalmology and Otolaryngology University Station, Charlottesville At: Medical College of Virginia, Richmond	Postgraduate Course in Ophthalmology and Otolaryngology	4 days, Dec. 1947	full course 25.00 part 15.00

OTOLOGY

New York Polyclinic Medical School and Hospital, 341-353 W. 50th St., New York	Advanced Otology	Arranged	250.00

OTORHINOLARYNGOLOGY

University of California Medical School, San Francisco 22 At: Medical Center	Postgraduate Course in Otorhinolaryngology	5 days, full time, Sept. 8-12, 1947	60.00
Cleveland Clinic, Euclid Ave. at E. 93rd St., Cleveland 6, Ohio	Diseases of Eye, Ear, Nose and Throat Course	3 days, first week in Dec. 1947	Not given

POSTGRADUATE COURSES

Selected Postgraduate Continuation Courses for Practicing Physicians—September 1, 1947 to January 15, 1948

PATHOLOGY

Institution	*Title of Course*	*Schedule of Course*	*Registration Fee and/or Tuition*
Cook County Graduate School of Medicine, 427 S. Honore St., Chicago	1 Month Course Surgical Pathology	1 month, full time, every month	250.00
U-Maryland School of Medicine, Lombard and Greene Sts., Baltimore	Neuropathology[1]	6 months, full time, arranged	210.00
Duke University School of Medicine, Durham, N. C.	Pathology	3 months or longer, full time, arranged	per mo. 50.00
	Pathological Research	3 months or longer, full time, arranged	per mo. 50.00
	Gross and Microscopic Conferences on Surgical Pathology	3 months or longer, full time, arranged	per mo. 50.00
	Systematic Review of General and Surgical Pathology	3 months or longer, full time, arranged	per mo. 50.00
	Staff Appointment in Pathology	3 months or longer, full time, arranged	per mo. 50.00
University of Texas Medical Branch, 912 Ave. B, Galveston	Surgical Pathology	Arranged	Not given

PEDIATRICS

Cook County Graduate School of Medicine, 427 S. Honore St., Chicago	Clinical Course in Pediatrics	2 weeks or 1 month, full time, every two weeks	2 wks. 60.00 1 mo. 100.00
University of Minnesota Medical School, Minneapolis 14	Pediatrics	6 weeks, full time, arranged	Arranged
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York	Clinical Pediatrics	1-9 months, all year	1 mo. 150.00 3 mo. 250.00 6 mo. 450.00 9 mo. 650.00
		4 weeks, part time, arranged	Not given
New York Postgraduate Medical School, 303 E. 20th St., New York 3	Allergy for Pediatricians (Restricted to Pediatricians)[1]	5 days, full time, Oct. 6-10, 1947	75.00
	Cardiology for Pediatricians (Restricted to Pediatricians)[1]	5 days, full time, Dec. 8-12, 1947	75.00
	Clinical Pediatrics	4 weeks, full time, Oct. 13-Nov. 8, 1947	150.00
	Clinical Pediatrics	4 weeks, full time, Jan. 5-31, 1948	150.00
	Dermatology for Pediatricians (Restricted to Pediatricians)[1]	5 days, full time, Sept. 29-Oct. 3, 1947	75.00
	Neurology and Psychiatry for Pediatricians (Restricted to Pediatricians)[1]	2 weeks, full time, Oct. 13-25, 1947	100.00
	Practical Clinical Pediatrics	4 weeks, full time, Nov. 10-Dec. 5, 1947	125.00
Duke University School of Medicine, Durham, N. C.	Pediatrics	3 months or longer, full time, arranged	per mo. 50.00
University of Cincinnati College of Medicine, Eden and Bethesda Aves., Cincinnati, Ohio	Pediatrics	3-4 months, Cont.	per mo. 30.00
Oregon State Medical Society and Oregon State Board of Health, Portland	Refresher Course in Pediatrics	Arranged, Fall 1947 (Tentative)	Not given

POSTGRADUATE COURSES

Selected Postgraduate Continuation Courses for Practicing Physicians—September 1, 1947 to January 15, 1948

PEDIATRICS—*Continued*

Institution	*Title of Course*	*Schedule of Course*	*Registration Fee and/or Tuition*
University of Texas Medical Branch, 912 Ave. B, Galveston	Pediatrics	1 week, Oct. 1947	25.00
University of Wisconsin Medical School, 418 N. Randall St., Madison	Course in Pediatrics for Specialists	2-6 months, arranged	per mo. 100.00

POLIOMYELITIS

Georgia Warm Springs Foundation, Warm Springs At: Jewish Hospital	Poliomyelitis	2 weeks, first Monday in Oct. 1947	Not given

PROCTOLOGY

New York Polyclinic Medical School and Hospital, 341-353 W. 50th St., New York	Proctology and Gastroenterology (clinical)	6 weeks, Oct. 1, 1947-Jan. 2, 1948	100.00
	Combined Proctology and Gastroenterology (clinical) and operative (cadaver) Proctology.	6 weeks, Oct. 1, 1947-Jan. 2, 1948	200.00

RADIOLOGY

Cook County Graduate School of Medicine, 427 S. Honore St., Chicago	Clinical Roentgenology	2 weeks, full time, third Monday of every month	70.00
	Lecture and Clinical Roentgenology	2 weeks, full time, first Monday of every month	125.00
	X-ray Therapy	2 weeks or 1 month, full time	2 wks. 100.00 1 mo. 200.00
University of Kansas School of Medicine, 39th St. and Rainbow Blvd., Kansas City	Radiology and Cancer	3 days, Jan. 19-21, 1948	15.00
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32 At: Affiliated Hospitals	Symposium on Diagnostic Radiology[1]	10 weeks, full time, Sept. 29-Dec. 5, 1947	250.00
New York Polyclinic Medical School and Hospital, 341-353 W. 50th St., New York	Radiology	8 months, Oct. 1, 1947-Jan. 2, 1948	300.00
University of Oregon Medical School, 3181 S.W. Marquam Hill Road, Portland 1	Radiology	5 days, full time, Nov. 10-14, 1947	50.00

THERAPY

Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32 At: Columbia Presbyterian Medical Center	Physiologic Therapy in Respiratory Diseases	6 days, full time, Jan. 26-31, 1948	40.00

UROLOGY

James Buchanan Brady Foundation of The New York Hospital, 525 E. 68th St., New York	Postgraduate Course in Urology	6 months, full time, Jan.-July, 1948	500.00[5]
New York Postgraduate Medical School, 303 E. 20th St., New York 3	Advanced Course in Urology (Restricted to Urologists)	2 months, full time, Oct. 1, 1947	300.00

POSTGRADUATE COURSES

Selected Postgraduate Continuation Courses for Practicing Physicians—September 1, 1947 to January 15, 1948

UROLOGY—Continued

Institution	*Title of Course*	*Schedule of Course*	*Registration Fee and/or Tuition*
New York Polyclinic Medical School and Hospital, 341-353 W. 50th St., New York	Urology and Allied Subjects	8 months, full time, Oct. 1, 1947	800.00
VENEREAL DISEASES			
U. S. Public Health Service and Arkansas State Board of Health, Hot Springs National Park, Ark.	Ninth Postgraduate Course in The Management and Control of the Venereal Diseases	3 weeks, full time, fall 1947	None
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York, 32	Venereal and Skin Diseases	6 days, full time, Dec. 1-6, 1947	30.00

1. Specialists only.
2. Stipends up to a maximum of $250.00 per month are available if certain qualifications can be met.
3. Half fee to physicians in service.
4. Fellows and Jr. candidates.
5. Including dinners and luncheons.
6. No extra charge for longer stay.
7. Stipend (including travel) and tuition fee (when there is such) paid for by the department.

Medicine Makes the News

POLIOMYELITIS CONFERENCE

MARKING the twentieth anniversary of the founding of Georgia Warm Springs, a three-day clinical conference on diagnosis and treatment of poliomyelitis will be held at Warm Springs, Georgia, on September 15, 16, and 17.

The clinical conference will be led by approximately twenty of the nation's authorities in the fields of neurology, pathology, pediatrics, orthopedics, physical medicine, and internal medicine who will present papers reviewing the advances in poliomyelitis knowledge in these fields.

The papers and discussions will constitute a new book on diagnosis and treatment of the disease for publication in 1948. Clinical demonstrations of modern treatment methods will be given by the medical staff of the Warm Springs Foundation.

Physicians interested in attending this conference should make inquiries to the Georgia Warm Springs Foundation, 120 Broadway, New York 5, N. Y. Complete program of the meeting will be available on request.

A.M.A. ART SHOW

With some 1000 pieces on display, the Ninth Annual Exhibition of the American Physicians' Art Association, held during the A.M.A. Centen-

nial Meeting at Atlantic City, June 9 to 13, was the largest show yet held by the group.

The work shown—oils, water colors, charcoal sketches, etchings, photographs, sculptures, ceramics, needlework, metalwork—filled 6000 square feet of hanging surface and more than 5300 feet of floor space. A total of 1,104 entries in the various media was shown in the regular competition, in addition to works which were entered in a special division on the theme of "Courage and Devotion." Many of the latter were in the call-of-duty category and included recent works on World War II.

The art exhibition was under the direction of Mr. A. L. Rose, Mead Johnson Company, which sponsors the exhibit on a non-commercial basis and arranged for its transportation from Philadelphia where judges selected winners a week before the show. Cups, medals, and certificates were awarded the winning entries which came in from all over the United States, Canada, Hawaii, Costa Rica, Alaska, and Mexico.

Officers of the American Physicians' Art Association are: President, Dr. G. Harvey Agnew; first vice president, Dr. Chelsea Eaton; second vice president, Dr. Anthony Bassler; third vice president, Dr. Somers H. Sturgis; secretary, Dr. F. H. Redewill; assistant secretary, Dr. F. H. Redewill, Jr., and treasurer, Dr. Paul Wedgewood. Dr. Robert F. Ridpath served as general chairman of the 1947 exhibition.

PHYSICIANS' ART SHOW SETS RECORD

General view of the Ninth Annual Exhibition of the American Physicians' Art Association held in conjunction with the Centennial session of the A.M.A. at Atlantic City, June 9 to 13. This exhibit, which has established itself as a feature event of the annual A.M.A. meetings, is sponsored by Mead Johnson & Company of Evansville, Indiana.

After Hours

ON WRITING AND OTHER ARTS

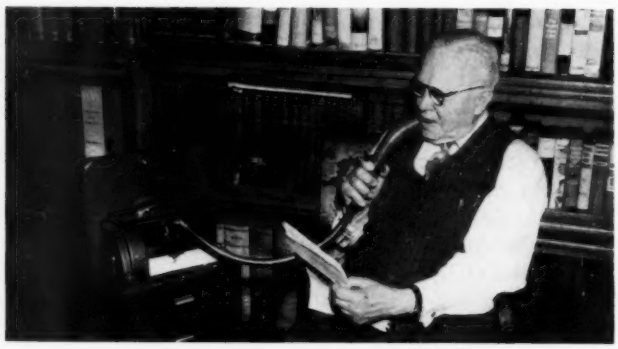
PHYSICIAN AND COLUMNIST

Dr. William E. Ground, of Superior, Wisconsin, who has been in continuous active medical practice for more than sixty-six years, has set a record few other physicians in the United States can match. There are older physicians still in practice, but probably none have put in as many years of active practice.

Dr. Ground received his M.D. degree in 1881 at the age of 20, and after spending more than half a dozen years in hospitals in the east and abroad, studying postgraduate work in gynecology and general surgery, he decided to select a permanent location. Not liking heat or large cities, favoring water and wanting to be near it, he looked at the map and decided to settle at the Head of the Great Lakes.

Dr. Ground has written more than a hundred medical and scientific papers and, for many years, has contributed a column every month or so to the Superior, Wisconsin, daily newspaper, *The Evening Telegram*. The subjects of his columns vary with the thoughts and problems of the day, and may be medical, political, social, or philosophical in nature.

Dr. Ground believes that in addition to first class scientific and clinical training, a physician requires a general cultural background if he is to retain a broad outlook on life and an inexhaustible fund of idealism if he is to give his patients the sympathy and courage which they demand of the Healing Art. Perhaps a knowledge of the great men of medicine and the spirit that animated them will give the physician something of both, he added.



W. E. GROUND, M.D.

* * *

MILITARY MEDICO

A doctor in literature is Colonel James M. Phalen, who has been editor of *The Military Surgeon* since 1940. Spending most of his adult life in the Army Medical Corps, he was, until his retirement, known as a specialist in medical field service and administration. Many years ago Colonel Phalen planned to do editorial work and he fits into his present niche perfectly. He combines a deep analytical ability with subtle humor, making his editorials for the journal widely read. His views are bitterly attacked and warmly defended, but they are never ignored.

Those people for whom Ireland has always had an attraction, and who hope some day to visit that country, will probably enjoy such a trip more if they have read Colonel Phalen's book, "I Follow Mr. Thackeray." This work, more or less, describes the same tour made by the British novelist many years earlier. Published in 1946, it is an objective discourse upon the experiences and impressions of a summer sojurn in Ireland during 1939, a year of troubled peace.

Another book, written a few years ago by Dr. Phalen, is "Sinnissippi, A Valley Under a Spell." This is a history book of an unusual sort. It is a history of Wisconsin, which tells not so much about the state's development since the coming of the white man as it does about the geological history of the land itself, and the changes in the character and population of the state's Indian inhabitants. The passage on the Colonel's own youth in Troy Valley is apt to re-

mind the reader of his own younger days. The author writes enthusiastically about the charm of the historic Rock River country and its people, of their adventures and their achievements.

* * *

THE COLLECTING SPIRIT

The collecting spirit is quite common among physicians and in Cleveland, one of the most enthusiastic is Dr. Warren C. Fargo who started his collection of bells about 20 years ago when he found three small brass (English) bells in Montreal.

Since then, Dr. Fargo has acquired bells from Persia, India, Guam, Belgium, Italy, England and Germany. His bells are all small, all metal—brass, copper, iron, pewter—and none more than six inches in height. Doctor Fargo's bells are both old and new, some quite primitive and many are very beautifully hand made.

"The bells are delightful and intriguing," says Doctor Fargo, "and seem to interest both old and young. I take pleasure in the different tones and the fact that they can be found usually in almost any part of the world fits in with my other hobbies of globe-trotting and taking color movies."

Dr. Paul G. Moore, also of Cleveland, has a collection of shaving mugs and Toby jugs. While driving through Pennsylvania with Mrs. Moore, who was collecting colored glass, Doctor Moore became interested in collecting. He now has 60 shaving mugs, some bearing fraternal and industrial emblems.

Doctor Moore has several jugs or pitchers, duplicates of which may be found in the National Museum at Toronto. Several of his jugs were made in Sauergemines on the border of Germany.

Doctor Moore also has a number of old deep-blue whisky glasses, made some years ago in Zanesville, Ohio; cheaters — glasses that appeared to hold four ounces of whisky and only held two. Some of his whisky glasses are of cut glass, some with 16 panels on the side and a flower in the bottom sealed in below with gold leaf.

* * *

MORE HOBBIES

Head of Helen-Marie Farnacy, modeled by her father, Dr. N. Lester Farnacy.

A Cleveland physician whose hobbies are in the fields of fine arts is Dr. N. Lester Farnacy. He has some splendid specimens of craftsmanship in metals. He first models in clay and then has them cast in bronze. He has done pencil sketches and water colors—landscape scenes and portraits of his daughters, some of which have been exhibited. Doctor Farnacy also carves in wood. In this medium he has used various woods and likes black walnut, peach wood and Philippine mahogany.

One doctor who is outstanding in that he has a combination of hobbies is Dr. Henry J. John of Cleveland. His many hobbies are, in the main, connected with his interest in keeping alive the great cultural heritage of Czechoslovakia. He has done Czech translations of *Belles Lettres* and collected some 1,000 contemporary Czech etchings which may be the largest collection of its kind in the world. Doctor John's library has some thousands of books on all subjects but with a special interest in art. Among them are some rare and first editions of Czech, French, German and modern contemporary European literature.

In 1929 Doctor John gave full rein to one of his special interests by establishing Camp Ho Mita Koda (Sioux Indian meaning "Welcome, my friend") thus providing a vacation place and medical care for 50-60 diabetic children. Doctor John says of his camp, "It is a place where many children meet, for the first time, other children in the same boat and can see what these others have accomplished."

* * *

PHYSICIAN-POET

Why prisoners write poetry is one of the mysteries of literature. One physician who wrote poetry during the three years he was a captive at Bilibid Prison in Manila, was an American prisoner-of-war, Major Charles Brown of the U. S. Army Medical Corps. His book, "Bars From Bilibid Prison," published in March 1947, by the Naylor Company of San Antonio, Texas, expresses the thoughts and

emotions of a man who dreamed of a day when he would be released.

General Jonathan M. Wainwright, in his foreword to Dr. Brown's book, says: "Major Brown should be complimented for his ability to lift from his heart these memories and put them in a narrative and verse."

CHARLES BROWN, M.D.

These poems were written while the actual experiences upon which they are based were being endured. Dr. Brown begins each chapter with a description in prose of the treatment of Allied prisoners-of-war by the Japanese. "I first saw the ancient gate of the old Spanish prison," writes Dr. Brown, "in a downpour of rain, as a prisoner of the Japanese after the fall of Bataan. The jungle had been horrible enough, but at least, it had been alive. Bilibid Prison was dead! The odor of death clung to it like the fungus on the walls." There are tragedy and pathos in Dr. Brown's verses, some irony and satire, but no bitterness, and most remarkable of all, even some humor.

The following are just two of the poems in his book:

PRISON POT

The prison is a cauldron
With a purging flame that burns
Some men into their ashes,
And they never will return.

But there are others in the kettle
Who, the hotter there the flame,
The tougher gets their mettle.
And they return from it the same.

MY SWEETHEART

My sweetheart is Malaria,
And I met her in Bataan;
I'm just one love of her many loves,
But still her favorite man.

Our love began with a tropic moon,
Where the river meets the sea;
And she spends her charms in other arms,
But always returns to me.

Our love is like all other loves,
She leaves me now and then;
But my fever burns and love returns,
To embrace me once again.

In my lover's arms I tremble,
With hot and fevered brow;
But she holds me less in each fond caress,
So she'll be leaving now.

My sweetheart is Malaria,
And I met her in Bataan;
I'm just one of her many loves,
But still her favorite man.

MEDICAL LOGICIAN

A Chicago physician whose foresight was verified is Brigadier General G. M. Blech, Army Medical Corps, who wrote "Medical Tactics and Logistics" (published by Charles C Thomas in 1934) to afford medical officers, physicians, and medical students a fundamental idea of the nature of their duties in the event of war.

These concrete tactical studies to develop the leadership of responsible medical officers before, during, and after battles was valuable in particular to medical instructors of the Medical Reserve and the National Guard before and during World War II. The book, intended primarily to enlist the consideration of medical practitioners in problems of national defense, is written in an easy style. The other important avocations of this Chicago surgeon are studies on strategy and, most appropriately for a logician, the game of chess